Government
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SESSIONAL PAPERS.

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FIRST SESSION

OF THE

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OF THE

PROVINCE OF ONTARIO.

SESSION 1912.

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No. 2 — Estimates—Supplementary for the service of the Province for the year ending 31st October, 1912. Presented to the Legislature, 26th February and 28th March, 1912. *Printed.* Estimates for the year ending 31st October, 1913. Presented to the Legislature, 1st April, 1912. *Printed.*

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No. 4 — Report of the Bureau of Mines, for the year 1911. Presented to the Legislature, 15th March, 1912. *Printed.*

No. 5 — Report of the Inspector of Division Courts, for the year 1911. Presented to the Legislature, 1st March, 1912. *Printed.*

No. 6 — Report of the Inspector of Legal Offices, for the year 1911. Presented to the Legislature, 13th March, 1912. *Printed.*

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No. 18 Report of the Secretary and Registrar of the Province, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

No. 19 Report upon the Registration of Births, Marriages and Deaths, for the year 1910-11. Presented to the Legislature, 1st March, 1912. *Printed.*

No. 20 Report of the Provincial Board of Health, for the year 1911. Presented to the Legislature, 1st March, 1912. *Printed.*

No. 21 Report on the Hospitals for the Insane, for the year 1911. Presented to the Legislature, 18th March, 1912. *Printed.*

No. 22 Report on the Hospitals for Idiots and Epileptics, for the year 1911. Presented to the Legislature, 18th March, 1912. *Printed.*

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No. 24 Report upon the Hospitals and Charities, for the year 1911. Presented to the Legislature, 25th March, 1912. *Printed.*

No. 25 Report upon the Common Gaols and Prisons, for the year 1911. Presented to the Legislature, 18th March, 1912. *Printed.*

No. 26 Report upon Neglected and Dependent Children, for the year 1911. Presented to the Legislature, 22nd March, 1912. *Printed.*

No. 27 Report upon the Operation of the Liquor License Acts, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

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No. 29 Report of the Agricultural College and Agricultural Farm, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 30 Report of the Ontario Veterinary College, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

No. 31 Report of the Ontario Agricultural and Experimental Union, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 32 Report of the Fruit Growers' Association of Ontario, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

No. 33 Report of the Fruit Branch of the Department of Agriculture, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

No. 34 Report of the Ontario Vegetable Growers' Association, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 35 Report of the Corn Growers' Association, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

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No. 36 Report of the Entomological Society of Ontario, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

No. 37 Report of the Ontario Bee-Keepers' Association, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 38 Report of the Dairymen's Associations of Ontario, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 39 Report of the Live Stock Associations of Ontario, for the year 1911. Presented to the Legislature, 22nd February, 1912. *Printed.*

No. 40 Report of the Farmers' Institutes of Ontario, for the year 1911. Presented to the Legislature, 22nd February, 1912. *Printed.*

No. 41 Report of the Women's Institutes of Ontario, for the year 1911. Presented to the Legislature, 22nd February, 1912. *Printed.*

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No. 42 Report of the Horticultural Societies of Ontario, for the year 1911. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 43 Report of the Agricultural Societies of Ontario, for the year 1911. Presented to the Legislature, 22nd February, 1912. *Printed.*

No. 44 Report of the Bureau of Industries, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

No. 45 Report of the Inspectors of Factories, for the year 1911. Presented to the Legislature, 2nd April, 1912. *Printed.*

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No. 46 Report of the Temiskaming and Northern Ontario Railway, for the year ending 31st October, 1911. Presented to the Legislature, 22nd February, 1912. *Printed.*

No. 47 Report of the Hydro-Electric Power Commission, for the year 1911. Presented to the Legislature, 11th April, 1912. *Printed.*

No. 48 Report of the Ontario Railway and Municipal Board, for the year 1911. Presented to the Legislature, 11th April, 1912. *Printed.*

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No. 49 Return from the Records of the General Elections in 1911. Presented to the Legislature, 7th February, 1912. *Printed.*

No. 50 Report of the Archivist of Ontario. Presented to the Legislature, 3rd April, 1912. *Printed.*

No. 51 Report on the State of the Legislative Library. Presented to the Legislature, 8th February, 1912. *Not Printed.*

No. 52 Report of the Game and Fisheries Commission, for 1909-11. Presented to the Legislature, 2nd April, 1912. *Printed.*

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No. 53 Statements of Provincial Auditor under Audit Acts. Presented to the Legislature, 26th March, 1912. *Printed.*

No. 54 Return to an Address to His Honour the Lieutenant-Governor of the Fourteenth day of February, 1912, praying that he will cause to be laid before this House a Return of copies of—

1. All correspondence which has passed since the 1st day of August, 1908, between the Government of the Province of Ontario or any member thereof or any person on its behalf, and the Government of the Dominion of Canada, or any member thereof or any person on its behalf, in reference to the Boundary between the Provinces of Ontario and Manitoba, through the territory now known as the District of Keewatin.

2. All correspondence which has passed since the 1st day of August, 1908, between the Government of the Province of Ontario or any member thereof or any person on its behalf, and the Government of the Province of Manitoba or any member thereof or any person on its behalf, in reference to the boundary between the Province of Ontario and Manitoba through the territory now known as the District of Keewatin.

3. All other papers in the possession of the Government in reference to the said boundary, including all reports in the possession of the Government in reference to the character and resources of the territory now known as the District of Keewatin. Presented to the Legislature, 20th February, 1912. *Mr. Rowell. Printed for Distribution.*

No. 55 Return to an Order of the House of the Fourteenth day of February, 1912, shewing—

1. What prosecutions have been instituted against parties in Northern Ontario for the illegal sale of liquor in Northern Ontario during the calendar year 1911.

2. The result of such prosecutions.

3. What amount the Government has received during the calendar year 1911 by way of fines imposed for the illegal sale of liquor in Northern Ontario. Presented to the Legislature, 20th February, 1912. *Mr. McDonald. Not Printed.*

No. 56 Copies of Orders-in-Council in accordance with the provisions of s-s. 6 of s. 78 of the Surrogate Courts Act. Presented to the Legislature, 22nd February, 1912. *Not Printed.*

No. 57 Copies of Orders-in-Council and Regulations required by section 27 of the Department of Education Act. Presented to the Legislature, 22nd February, 1912. *Not Printed.*

No. 58 Copy of Questions submitted to the Supreme Court, by the Government of Canada, relative to the *Ne Temere* decree and an Act to amend the Marriage Act. Presented to the Legislature. 27th February, 1912. *Not Printed.*

No. 59 Copy of an Order-in-Council of the Government of Canada, respecting the Boundary Line between Ontario and Manitoba. Presented to the Legislature, 27th February, 1912. *Not Printed.*

No. 60 Report upon Infant Mortality in the Province. (*Not Presented.*)

No. 61 Return to an Order of the House of the 23rd of February, 1912, for a Return of all correspondence from August, 1st, 1911, to date, between the Attorney-General or any official of his Department and any person or persons of the Town of Chesley or elsewhere, respecting the prosecution, conviction and fining of one Charles Subject by Magistrate Montgomery for an infringement of the provisions of the Liquor License Act. Presented to the Legislature, 1st March, 1912. *Mr. McDonald. Not Printed.*

No. 62 Merchant's report on the condition of English-French Schools in the Province. Presented to the Legislature, 6th March, 1912. *Printed for Distribution.*

No. 63 Copy of an Order-in-Council increasing the commutation paid to His Honour A. D. Hardy, Judge of the County Court of Brant. Presented to the Legislature, 13th March, 1912. *Not Printed.*

No. 64 Return to an Order of the House of the Twenty-sixth day of February, 1912, for a Return of copies of: 1. All correspondence between the Government or any member or official thereof or the Temiskaming and Northern Ontario Railway Commission or any member or official thereof and the Grand Trunk Pacific Railway Company or the Grand Trunk Railway or any official of either of them with respect to.

(*a*) The acquisition of running rights over the Temiskaming and Northern Ontario Railway;

(*b*) The leasing, running, or operating of dining, cafe, or buffet cars on the tracks of the Temiskaming and Northern Ontario Railway.

2. All agreements between the Government of Ontario or any department thereof or the Temiskaming and Northern Ontario Railway Commission and any other person or corporation with respect to:

(*a*) The acquisition of running rights over the Temiskaming and Northern Ontario Railway;

(*b*) The leasing, running, or operating of dining, cafe, or buffet cars on the tracks of the Temiskaming and Northern Ontario Railway. Presented to the Legislature, 19th March, 1912. *Mr. Rowell. Not Printed.*

No. 65 — Interim Report on Laws, relating to the liability of employers to make compensation to their employees for injuries received in the course of their employment which are in force in other countries and as to how far such laws are found to work satisfactorily. Presented to the Legislature, 29th March, 1912. *Printed.*

No. 66 — Agreement made by and between the Kinleith Paper Company, Limited, of the first part, and His Majesty the King, represented by the Honourable the Treasurer, of the second part, conditioned for the supply of printing paper for the use of the Province. Presented to the Legislature, 20th of March, 1912. *Printed.*

No. 67 — Agreement made by and between the Montrose Paper Mills, Limited, of the first part and His Majesty the King, represented by the Honourable the Treasurer, of the second part, conditioned for the supply of printing paper for the use of the Province. Presented to the Legislature, 20th March, 1912. *Printed.*

No. 68 — Agreement made by and between the Georgetown Coated Paper Mills, Limited, of the first part, and His Majesty the King, represented by the Honourable the Treasurer, of the second part, conditioned for the supply of printing paper for the use of the Province. Presented to the Legislature, 20th March, 1912. *Printed.*

No. 69 — Bulletin of the Ontario Hospitals for the Insane in the interests of Psychiatry. Presented to the Legislature, 21st March, 1912. *Printed for Distribution.*

No. 70 Report on James Bay Survey Explorations, Cochrane to James Bay, June 9th to September 12th, 1911. Presented to the Legislature, 21st March, 1912. *Printed for Distribution.*

No. 71 Report of special investigation into the cause of Typhoid Fever in the Town of Sarnia. Presented to the Legislature, 21st March, 1912. *Printed.*

No. 72 A Return to an Order of the House of the 14th February, 1912, for a Return shewing: 1. All complaints received by the Government since the first day of January, 1911, in reference to the participation of any officers, officials or employees of the Government in political contests or taking part in political matters in this Province.

2. All correspondence arising out of or incidental to such complaints.

3. All correspondence passing between the Government or any Department or Member thereof and any officer, officials, or employees of the Government with reference to the participation of such officers, officials or employees in political contests or taking part in political matters in this Province since the first day of January, 1911. Presented to the Legislature, 22nd March, 1912. *Mr. Mageau. Not Printed.*

No. 73 Statement of the distribution of Revised and Sessional Statutes. Presented to the Legislature, 25th March, 1912. *Not Printed.*

No. 74 Return to an Address to His Honour the Lieutenant-Governor of the 14th February, 1912, praying that he will cause to be laid before this House a Return of copies of all correspondence between the Government of the Province of Ontario or any member thereof, or any person on its behalf, and the Government of the Dominion of Canada, or any member thereof, or any person on its behalf, with reference to the construction of permanent highways in the Province or grants to aid in such construction. Presented to the Legislature, 26th March, 1912. *Mr. Ferguson (Kent). Not Printed.*

No. 75 Return to an Order of the House of the 27th February, 1912, showing:—1. How many barrels of apples were produced in each year in each of the 45 Demonstration Orchards instituted by the Government. 2. What was the sale price *per* barrel of the apples from each of the said Demonstration Orchards. 3. What are the names and qualifications of the several orchard demonstrators now in the employ of the Government. Presented to the Legislature, 26th March, 1912. *Mr. Anderson (Bruce). Not Printed.*

No. 76 Return to an Order of the House of the 8th March, 1912, for a Return of copies of all correspondence between any person and the Government or any member thereof with respect to the construction of a Branch of the Temiskaming and Northern Ontario Railway to Elk Lake or further, with memorandum of dates upon which delegations waited upon the Government or any member thereof in support of the construction of the said Branch; also all surveyors' or other reports received by the Government with respect to the feasibility and cost of construction of the said Branch and all other papers or documents bearing upon the question of the construction of the said Branch. Presented to the Legislature, 27th March, 1912. *Mr. Mageau. Not Printed.*

No. 77 Return to an Order of the House of the 23rd February, 1912, for a Return shewing: The names of all persons to whom payments have been made in connection with the present Revision of the Statutes, and the total amount paid to each, and the services or other matter in respect of which such payments were made. Presented to the Legislature, 29th March, 1912. *Mr. Proudfoot. Not Printed.*

No. 78 Return to an Order of the House of the 15th March, 1912, for a Return of copies of all correspondence since the first day of January, 1911, between the Minister of Education, the Deputy-Minister of Education or any Official of the Department of Education and any School Trustee, Board of Trustees, or any person in the Township of Springer, with respect to the character of teaching in the Schools of the said Township, with respect to the teaching of French in the said Schools, with respect to the employment of teachers in the said Schools, or with respect to the giving or withholding of grants from the said Schools or any of them. Presented to the Legislature, 1st April, 1912. *Mr. Marshall. Not Printed.*

No. 79 Return to an Order of the House of the 28th day of February, 1911, for a Return shewing: (*a*) The number of sales of timber limits which have taken place in each year since 1905; (*b*) The location and acreage of each limit sold; and (*c*) The name of the purchaser in each case; (*d*) The price paid per acre, or otherwise, in each case; (*e*) The berth, or area of each berth, which had been under permit previous to the sale, with the original date of the permit; (*f*) The area of each berth damaged by fire previous to the sale; (*g*) The berth, or berths, which were virgin territory; (*h*) The reasons which caused each timber sale to be held from 1905 down to date; (*i*) The number of permits to cut timber current in the season of 1904-5; the number of permits to cut timber current in the season of 1910-11. Presented to the Legislature, 3rd April, 1912. *Mr. MacKay. Not Printed.*

No. 80 Report of Proceedings of the Twelfth Canadian Conference of Charities and Correction. Presented to the Legislature, 10th April, 1912. *Printed for Distribution.*

No. 81 Report of the Sixth Annual Meeting of the Canadian Hospital Association. Presented to the Legislature, 10th April, 1912. *Printed for Distribution.*

No. 82 Return to an Order of the House of the 14th February, 1912, for a Return of copies of all correspondence passing in the years 1905 and 1906 between the Attorney-General or any officer or official of his Department and Mr. J. W. Curry, K.C., Crown Attorney of the City of Toronto, or his successor, with reference to the prosecution of any alleged combines and all briefs, statements or other documents furnished by Mr. Curry to the Attorney-General or any officer or official of his Department with reference to any of the said alleged combines. Presented to the Legislature, 10th April, 1912. *Mr. Elliott. Not Printed.*

No. 83 Return to an Order of the House of the 9th April, 1912, for a Return of copies of (1) All correspondence between the Government or any Minister or Officer thereof and any person, association, board or organization whatsoever, between the 1st day of July, 1911, and the present date; and also (2) All protests, resolutions, objections or written statements of any kind whatsoever received by the Government or any Minister or Officer thereof, between the said dates with respect to: (*a*) The conduct of one S. J. Dempsey, in his official capacity as Police Magistrate or as Crown Lands Agent; (*b*) The participation of the said S. J. Dempsey in the Federal Election contest in South Renfrew; (*c*) The participation of the said S. J. Dempsey in the Provincial Election contests held in December, 1911. Presented to the Legislature, 12th April, 1912. *Mr. McQueen. Not Printed.*

Forty-Second Annual Report

OF THE

Entomological Society

OF ONTARIO

1911

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty

1912.

Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO.

To His Honour Col. Sir John Morison Gibson, K.C.M.G., etc., etc., etc.,
Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned begs to present herewith, for the consideration of your Honour, the Report of the Entomological Society of Ontario for 1911.

Respectfully submitted,

JAMES S. DUFF,

Minister of Agriculture.

Toronto, 1912.

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FORTY-SECOND ANNUAL REPORT

OF THE

Entomological Society of Ontario

1911

To the Honourable James S. Duff, Minister of Agriculture.

SIR,—I have the honour to present herewith the Forty-second Annual Report of the Entomological Society of Ontario.

The Forty-eighth Annual Meeting of the Society was held at the Ontario Agricultural College, Guelph, on the 23rd and 24th of November, 1911. The proceedings are given in full in the following pages and include the reports of the various officers and branches of the Society, together with the papers and addresses on entomological topics presented during the meetings.

The "Canadian Entomologist," the monthly organ of the Society, has been issued regularly during the past year and has now completed its forty-third volume. Its wide circulation and value as a scientific publication have been well maintained.

I have the honour to be, Sir,

Your obedient servant,

EDMUND M. WALKER,

Editor.

Biological Department,
University of Toronto.

Entomological Society of Ontario.

OFFICERS FOR 1911-1912.

President—Dr. Edmund M. Walker, Lecturer in Zoology, University of Toronto.

Vice-President—Dr. C. Gordon Hewitt, Dominion Entomologist, Central Experimental Farm, Ottawa.

Secretary-Treasurer—Mr. A. W. Baker, B.S.A., O. A. College, Guelph.

Curator—Mr. Lawson Caesar, B.A., B.S.A., Lecturer in Entomology and Plant Diseases, O. A. College, Guelph.

Directors—Division No. 1, Mr. Arthur Gibson, Department of Entomology, Central Experimental Farm, Ottawa; Division No. 2, Mr. C. E. Grant, Orillia; Division No. 3, Mr. A. Cosens, Parkdale Collegiate Institute, Toronto; Division No. 4, Mr. C. W. Nash, East Toronto; Division No. 5, Mr. R. S. Duncan, B.S.A., Port Hope; Division No. 6, Mr. R. S. Hamilton, Collegiate Institute, Galt; Division No. 7, Mr. W. A. Ross, B.S.A., Jordan Harbour.

Directors (Ex-Presidents of the Society) —Professor Wm. Saunders, C.M.G., LL.D., F.R.S.C., F.L.S., Director of the Experimental Farms of the Dominion of Canada, Ottawa; Rev. C. J. S. Bethune, M.A., D.C.L., F.R.S.C., Guelph; W. Hague Harrington, F.R.S.C., Ottawa; Professor John Dearness, Vice-Principal, Normal School, London; Henry H. Lyman, M.A., F.E.S., F.R.G.S., Montreal; Rev. Thomas W. Fyles, D.C.L., F.L.S., Hull, P.Q.; Professor Wm. Lochhead, B.A., M.S., Macdonald College, P.Q.; John D. Evans, C.E., Chief Engineer, Central Ontario Railway, Trenton; Professor Tennyson D. Jarvis, B.S.A., Ontario Agricultural College, Guelph.

Editor of the "Canadian Entomologist"—Dr. E. M. Walker, Toronto.

Delegate to the Royal Society—Professor J. M. Swaine, Macdonald College, P.Q.

Auditors—Professor J. Eaton Howitt, M.S.A., and Mr. W. A. McCubbin, M.A., Ontario Agricultural College, Guelph.

FINANCIAL STATEMENT

For the Year Ending October, 1911.

Receipts.		*Expenditures.*	
Balance for 1910	$729 96	Printing	$1,051 51
Members' Fees	387 61	Library	199 11
Government Grant	1,000 00	Expense	86 63
Sale, Reports and Back Numbers	180 00	Annual Report	93 60
Sale, Cork and Pins	113 72	Annual Meeting	48 05
Advertising	32 75	Salaries	100 00
Bank Interest	35 99	Cork and Pins	70 03
		Bank Exchange	4 90
		Balance on hand	826 20
	$2,480 03		$2,480 03

(Signed) J. E. Howitt,
Treasurer.

Examined and found correct.

(Signed) S. B. McCready,
J. W. Crow,
Auditors.

LIST OF CANADIAN MEMBERS.

Province of Ontario.

Abbott, Dr. A. R.	Toronto.
Arlidge, M. R.	Meaford.
Baker, A. C., O.A.C.	Guelph.
Baker, A. W., O.A.C.	"
Bock, H. P.	London.
Bowman, J. H.	"
Brodie, Miss	Toronto.
Caesar, Lawson, O.A.C.	Guelph.
Calvert, J. F.	London.
Craigie, L. H.	Toronto.
Cosens, A.	"
Dearness, Prof. J.	London.
Doherty, T. K.	Ottawa.
Duncan, R. S.	Port Hope.
Dunlop, James	Woodstock.
Eastham, J. W.	Ottawa.
Evans, J. D.	Trenton.
Gibson, Arthur	Ottawa.
Grant, C. E.	Orillia.
Gummer, A.	Toronto.
Hahn, Paul	"
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Harkness, D.	Jordan Harbour.
Harrington, W. H.	Ottawa.
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Hugh, W.	Englehart.
Inglis, John	Hamilton.
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Johnson, G. S.	Meaford.
Johnston, James	Hamilton.
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King, Vernon, O.A.C.	Guelph.
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Munro, James	"
Nash, C. W.	"
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Pettit, Morley	"
Ross, W. A.	Jordan Harbour.
Sanders, G. E.	Ottawa.
Saunders, H. S.	Toronto.
Silcox, Sidney	Stratford.
Smith, Arthur	Toronto.
Tanner, Harold	Stratford.
Toogood, W. A.	"
Tothill, J. D.	Ottawa.
Walker, Dr. E. M.	Toronto.
Washington, L. P.	Hamilton.
Watson, Dr. A. H. R.	Port Hope.
White, James	Snelgrove.
Williams, J. B.	Toronto.
Wood, S. T.	"
Young, C. H.	Ottawa.
Zavitz, E. J., O.A.C.	Guelph.

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Begin, Rev. Abbe, P.A.	Sherbrooke.
Boulton, A. R. M.	Quebec.
Brainerd, Dwight	Montreal.
Burgess, Dr. T. J. W.	Verdun.
Campbell, J. G.	Magog.
Chagnon, Gustave	Montreal.
Clayson, G. H.	"
Darling, H. M. E.	"
Delisle, A. M.	"
Denny, E.	"
Dunlop, G. C.	"
Earby, A.	"
Fosberry, C. S.	"
Fyles, Rev. Dr. T. W.	Hull.
Gerth, W. G.	Montreal.
Gibb, Lachlan	"
Griffin, A.	"
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Huard, Rev. Victor	Quebec.
Johnston, Miss M. G.	Miranda.
Kollmar, E. J.	Montreal.
Lochhead, Prof.	Macdonald Coll.
Lyman, H. H.	Montreal.
Moore, G. A.	"
Norris, A. E.	"
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Southee, G. R.	Outremont.
Sunderland, H.	Montreal.
Swaine, J. M.	Macdonald Coll.
Tourchot, A. L.	St. Hyacinthe.
Winn, A. F.	Montreal.

Alberta.

Carr, F. B.	High River.
Baird, Thos.	Edmonton.
Dod, F. H. Wolley	Millarville.
Moody, Miss	West Calgary.

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Burns, Wm.	"
Cockle, J. W.	Kaslo.
Croker, A. J.	Victoria.
Day, G. O.	Duncan's Station.
Draper, R.	Hillcrest.
Hadwen, Dr. S.	Vancouver.
Hanham, A. W.	Duncan's Station.
Harvey, R. V.	Victoria.
Keen, Rev. J. H.	Metlakatla.
Reed, E. Baynes	Victoria.
Ruhmam, Max	Vernon.
Russell, John	Hope Stn., C.P.R.
Scott, W. E.	Victoria.
Skinner, E. M.	Duncan's Station.
Taylor, Rev. G. W.	Departure Bay, Nanaimo.

BRITISH COLUMBIA.—*Continued.*

Treherne, R. C. ..... Vancouver.
Venables, E. P. ..... Vernon.
Winslow, R. M. ..... Victoria.

MANITOBA.

Criddle, Norman ..... Aweme.
Heath, E. F. ..... Cartwright.
Hone, Russell ..... Manitou.
Hunter, Rev. A. J. ..... Teulon.
Wallis, J. B. ..... Winnipeg.

NOVA SCOTIA.

Hervey, C. L. G. ..... Round Hill.
Mackay, Dr. A. H. ..... Halifax.
Payne, H. G. ..... Granville Ferry.

SASKATCHEWAN.

Androchowicz, E. ..... Humboldt.
Willing, T. N. ..... Regina.
Neville, S. J. ..... Cottonwood.

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Comstock, Prof. J. H. .... Ithaca, N.Y.
Cresson, Ezra T. ..... Philadelphia, Pa.
Felt, Dr. E. P. ..... Albany, N.Y.
Howard, Dr. L. O. ..... Washington D.C.
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Uhler, P. R. ..... Baltimore, Md.
Webster, F. M. ..... Washington, D.C.
Wickham, Prof. H. F. .... Iowa City, Iowa.

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Director of the Experimental Farms of the Dominion.
Bethune, Rev. C. J. S. ... Guelph.
Professor of Entomology, Ontario Agricultural College.
Reed, E. Baynes ..... Victoria, B.C.
Director of the Meteorological Station.

The Entomological Society of Ontario

ANNUAL MEETING

The Forty-eighth Annual Meeting of the Entomological Society of Ontario was held at the Ontario Agricultural College, Guelph, on Thursday and Friday, November 23rd and 24th. During the day meetings the chair was occupied by the President, Dr. E. M. Walker, and during the evening meeting by President Creelman of the College.

Among those present were Messrs. H. H. Lyman and A. F. Winn, Montreal; Dr. C. Gordon Hewitt and Mr. Arthur Gibson, Ottawa; Prof. J. M. Swaine, Macdonald College, St. Anne's, P.Q.; Mr. J. D. Evans, Trenton; Dr. E. M. Walker and Mr. J. B. Williams, Toronto; President Creelman, Professors C. J. S. Bethune, E. J. Zavitz, H. L. Hutt, T. D. Jarvis, J. E. Howitt, Messrs. L. Cæsar, Morley Pettit, W. A. McCubbin, and A. W. Baker, of the staff, and a number of students of the Ontario Agricultural College.

On Thursday morning a meeting of the Council was held, at which the report of the proceedings of the Society during the past year was drawn up, and various matters of interest to its members were discussed. In acceptance of an invitation from Dr. Hewitt it was decided to hold the next annual meeting at the Central Experimental Farm, Ottawa, the date to be fixed upon a later occasion.

Prof. J. H. Comstock, Cornell University, Ithaca, N.Y., and Dr. E. P. Felt, State Entomologist of New York, were elected honorary members of the Society.

Mr. E. Baynes Reed, Meteorological Station, Victoria, B.C., was elected a life member.

The afternoon meeting was held in the Biological Lecture Room, the proceedings commencing at two o'clock with the reading of the reports of the directors on the insects of the year in their respective districts. No reports were received from Mr. F. J. A. Morris, of Port Hope, representing Division No. 5, nor from Mr. R. S. Hamilton, of Galt, representing Division No. 6.

REPORTS ON INSECTS OF THE YEAR.

Division No. 1, Ottawa District—Arthur Gibson.

Weather conditions in the Ottawa district during the past season were specially favourable for the development of insect life. The latter part of April was very warm for that time, and later in May, from the 20th to the 28th, the temperature was high. The month of June was about normal, but during the first eleven days of July a very hot spell was experienced. On July 3rd the temperature reached 97.8 in the shade, and the maximum temperature from July 1st to 12th was 91.4. Early August, too, was extremely warm, the average maximum temperature for the first eight days being 93.4 in the shade. The season, therefore, was very exceptional and the continued drought seriously affected crops of all kinds.

The following notes cover those insects which were most complained of in the Ottawa district during 1911.

Attacking Field Crops.

Cutworms. The cutworm which caused most injury in 1911, in the Ottawa district, was the Red-backed Cutworm (*Paragrotis ochrogaster*, Gn.). In May many newly set out cabbages and cauliflowers were cut off and much damage was also done to radishes, peas, beans and other field crops. On June 5th larvæ were found in a field of beans, which varied in size from half an inch to one and a quarter inches in length. Wherever the well-known poison bran remedy was used the attack stopped at once. In the use of this mixture it is important that the bran be noticeably moistened so that the Paris green, when dusted in, will adhere to practically every particle. In one instance, which came to my notice, the bran was insufficiently moistened, and when placed in the field was much too dry and many of the particles had not been poisoned. When the mixture is quite dry the cutworms, of course, are not attracted to it as they are when the bran is moistened.

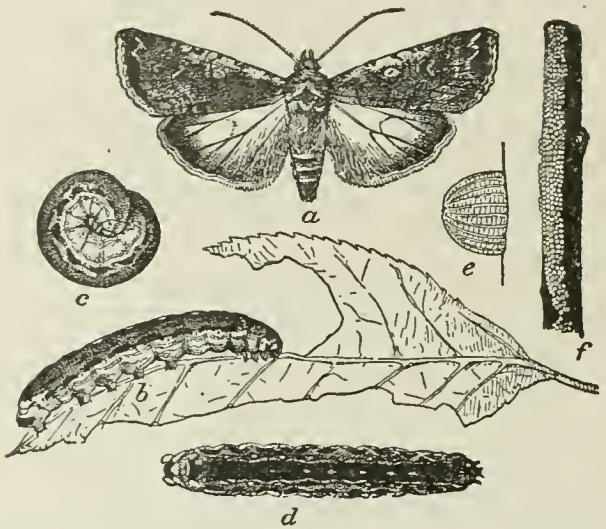


Fig. 1. Variegated Cutworm—*a*, moth; *b*, *c*, *d*, caterpillars; *e*, egg (magnified); *f* eggs on a stem.

The mixture should be scattered after sundown, so that it will be in the very best condition to attract the cutworms when they come out at night to feed. One half a pound of Paris green is sufficient to poison fifty pounds of bran, the latter being first moistened with sweetened water. Salt may be used instead of molasses or cheap sugar. If salt is used, half a pound may be dissolved in half a gallon of water and then added to the fifty pounds of bran; 50 to 100 pounds of bran is sufficient for an acre, according to the closeness of the plants.

The Radish, or Cabbage Root Maggot, was again abundant and caused much destruction. On May 26th the first flies were seen, and on May 29th large numbers of eggs were present on the stems of cauliflowers and cabbages, particularly the former. These soon hatched and the maggots at once began their work of destruction. The remedy which we have found most useful during the last two years for radishes is to water the plants once a week from the time they begin to appear until they are ready for the table with a decoction of hellebore, using two ounces to every gallon of water. For cauliflowers and cabbages the best protection can be had from the use of the well-known discs made from tarred building paper.

On the 9th of November of this year puparia and full-grown larvæ were found beneath cabbage plants.

The White Cabbage Butterfly (*Pontia rapæ*, L.). This well-known pest of the market gardener was more than usually abundant the past season. In the latter half of August it was specially complained of and was doing much injury all through the district.

Another insect which was destructive to cabbages is the Diamond-back Moth (*Plutella maculipennis*, Curt.) (Fig. 2). This insect has not occurred at Ottawa in destructive numbers for some years. The nature of the season affects considerably the abundance of this insect. In hot dry seasons, such as that of this year, the outbreak is always more serious. Continued damp weather is, of course, detrimental to this insect. At the end of August its ravages in many market gardens was very noticeable. On September 1st, I examined some cabbages and found the caterpillars in various stages of development from 3 mm. to 8 mm. in length. Many cocoons were also attached to the leaves, and one cocoon was seen from which the moth had evidently just emerged. As a remedy, kerosene emulsion has given good results, but the mixture must be applied as an under-

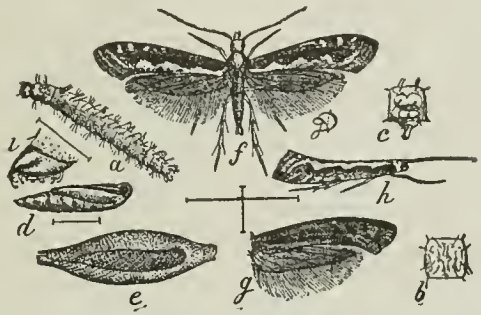


Fig. 2. Diamond-back Moth—*a*, caterpillar; *d*, pupa; *e*, cocoon; *f* and *h*, moth (all much enlarged).

spray. In fields where the insect has been troublesome all leaves and left-overs of cruciferous crops should be gathered up and destroyed so as to reduce as much as possible the over-wintering brood of the insects.

Attacking Fruit Trees.

Fruit insects were not particularly complained of during the season, but there are a few which require mention.

The American Tent Caterpillar (*Malacosoma americana*, Harr.) was the most conspicuous insect of the orchard in the Ottawa district during the past season. In orchards where no control measures were adopted many trees were entirely stripped of foliage. Further mention will be made of this insect and the Forest Tent Caterpillar under insects affecting forest and shade trees.

Cankerworms were also reported as having been destructive in apple orchards, particularly in the neighbourhood of Hull.

The Lesser Apple Worm (*Enarmonia prunivora*, Walsh.). I regret to have to report the finding of this insect in an orchard near Ottawa on August 10th. Fortunately the infestation was very slight, only three apples of the variety Lub's

Queen being found with larvæ at work. In orchards which are regularly sprayed for Codling Moth there should be no appreciable loss from the attacks of this insect.

Greenhouse and Garden Plants.

Last year I mentioned the occurrence of the Greenhouse Leaf-tyer (*Phlyctaenia ferrugalis,* Hbn.) in the house of one of our local florists. During last spring especially the insect did considerable injury to Azalea, Mignonette, Cyclamens and Cannas, particularly the latter. In some of the Montreal greenhouses considerable loss is occasioned by the larvæ of the Black Vine Weevil (*Otiorhynchus sulcatus,* Fab.) infesting the roots of Cyclamens, Gloxinias and Adiantums, but we have had no reports of this insect being present in any of the houses in our district.

Much injury to flowering plants in gardens was done by such regularly occurring pests as Cutworms, Tarnished Plant Bug and Four-lined Leaf Bug. The caterpillars of the White Cabbage Butterfly were also troublesome in beds of Mignonette and Nasturtium. The Grape Vine Leaf Hopper again rendered unsightly the foliage of Virginia Creeper, and in some gardens the Curled Rose Worm and the Destructive Pea Aphis were also present in conspicuous numbers.

Attacking Forest and Shade Trees.

Tent Caterpillars (*Malacosoma americana,* Harr., and *M. disstria,* Hbn.) These caterpillars were enormously abundant in the Ottawa district during the past season. Not only did they do serious damage to orchard, shade and forest trees, but they caused much annoyance, especially at maturity, by wandering into houses, dropping on to passers-by, etc. Throughout the woods in the district both the American Tent Caterpillar and the Forest Tent Caterpillar could be seen feeding together on the same trees. The larvæ hatched during the first week in May, and before the middle of the month the webs were conspicuous on many trees, particularly wild cherry. In one small clump of cherry trees twenty-six webs of the American Tent Caterpillar were counted on May 13th, and on this date the larvæ were about half an inch in length. In another locality, at Woodruffe, near Ottawa, the nests were numerous, and on May 19th the caterpillars were one inch in length. On May 27th at Chelsea, Que., both species occurred together and were in their last larval stage. Thousands were wandering about along fences, in and around houses, etc. Many trees had been entirely stripped of foliage. On June 5th some cocoons of *M. americana* which had been but recently made were found on apple and the larvae inside were just changing to pupæ. While in the Gatineau district, between Wakefield and Maniwaki, on June 12th to 14th, I saw large areas of poplar and birch which had been entirely defoliated by the Forest Tent Caterpillar. Near St. Joseph village, which is not far from Maniwaki, the caterpillars were so abundant in some of the lakes, that the men who were working on a drive of logs found it almost impossible to dip up water for drinking and cooking purposes without getting some of the larvæ in their pails. Many of the branches of poplar around the edges of these lakes extend out over the water, and I was informed that, during a very heavy rainstorm, the caterpillars were dislodged from the trees, falling into the water by hundreds. Just above North Wakefield and Low, Que., extensive tracts of trees, mostly poplars, were seen to have been

entirely denuded of foliage. In early July large nnmbers of the moths were observed around electric lights in Ottawa, and later in the month very many egg masses were seen on apple and cherry. On one small branch of wild cherry brought into the Division on July 29th there were 42 egg clusters. The egg masses occurred close together; in some instances they were overlapping. During the larval period I did not see a single diseased specimen, nor do the eggs which

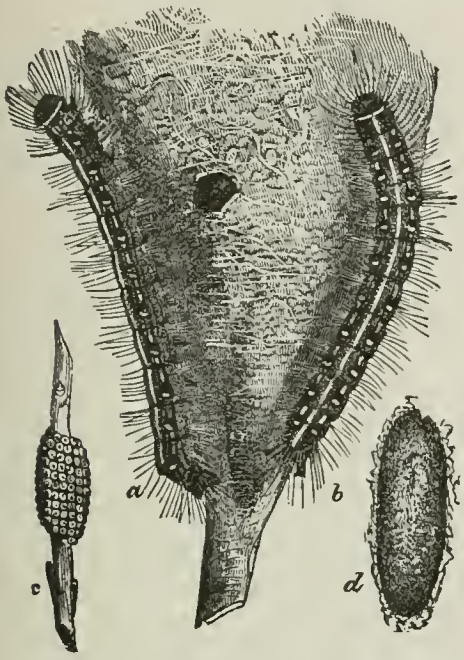


Fig. 3. American Tent Caterpillars on their web; *c*. egg-bracelet;; *d*, cocoon.

Fig. 4. Tent Caterpillar: Male Moth.

Fig. 5. Female Moth.

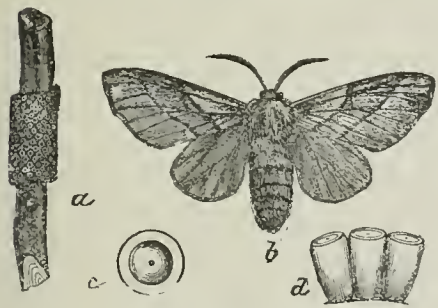


Fig. 6. Forest Tent Caterpillar: moth and eggs.

Fig. 7. Forest Tent Caterpillar.

are now on the trees seem to be much parasitized. Mr. Sanders, of the Division, collected in the middle of July many egg masses, but only a very small percentage of these were parasitized by *Telenomus* and *Trichogramma*. The probability is that next year these Tent Caterpillars will again be present in large numbers.

The Spruce Budworm (*Tortrix fumiferana*, Clemens) was again present in considerable numbers in the district. It did not, however, occur over such widespread areas as was the case in 1909 and 1910. The worst infestation which I saw

during the past summer was in the neighbourhood of Maniwaki, 83 miles north of Ottawa. Here, in one place, the insects were very abundant and had done much injury to the foliage of spruce. In this particular instance the caterpillars were present all over the trees feeding on the present year's growth, and in such localities the ends of all the twigs had the characteristic reddish appearance which was noted at the tops of the trees in the outbreaks of the two previous years. By June 14th, at Maniwaki, the larvæ had mostly pupated, but there were still many mature caterpillars to be seen. On this date, also, empty chrysalids were found and moths seen flying. On some of the trees the chrysalids were extremely numerous towards the ends of the lower branches, and some were even found attached to the bark of the trunks of the trees. On June 12th many spruce and balsam trees were seen to be attacked along the line of the Canadian Pacific Railway between Venosta and Low, Que. The same trees had been noticeably attacked near Pourpore, Que. At Ottawa, in late May, larvæ were found feeding on tamarack, and from specimens gathered which pupated on 1st June the moths emerged on 16th and 17th June. At Maniwaki it was seen that large numbers of the pupæ were parasitized. Dr. Hewitt, however, will have something to report on our work with the parasites of this insect. In the middle of July large numbers of egg masses were present on trees all through the Gatineau district and around Ottawa. The eggs too were found to be heavily parasitized. On 21st July, on the grounds of the Central Experimental Farm, many egg masses were seen on several kinds of spruces and also on white cedar, all, of course, on the undersides of the leaves.

The Maple-leaf Cutter. Toward the end of August the Maple-leaf Cutter (*Brackenridgia acerifoliella*, Fitch) was noticed abundantly on the foliage of hard maples throughout the district. The larvæ at this time were in their curious little cases which are formed of four pads cut from the leaves. In 1885 a similar outbreak, but more extensive, occurred at Ottawa, and is mentioned by Fletcher in his annual report for that year. On September 2nd of the present year I saw a row of hard maples, near Ottawa, which showed very conspicuously the work of the larvæ. At this date many of the cases containing the larvæ had fallen from the trees. The winter is passed inside of these little cases and the moths emerge the following spring.

The Elm Bark Louse (*Gossyparia spuria*, Modeer) occurred abundantly in some sections of the district. On 23rd of May I observed large numbers of the matured females on the branches of some elms near the city. These females, which are reddish and woolly-covered, are readily seen on the trees in spring and early summer, and it is at this time when the insect is so conspicuous that the trees should be sprayed, if possible, with either kerosene emulsion or whale-oil soap solution.

The Rusty Tussock Moth (*Notolophus antiqua*, L.) Towards the end of July the larvæ of this moth were rather numerous at Ottawa, and were especially observed to be doing noticeable injury to spruce trees. Mature larvæ were found on spruce on August 4th, and on this date one cocoon was also collected. These caterpillars, although they occur in the district in more or less numbers every season, are seldom present in numbers sufficient to do very serious damage. The larvæ have a wide range of food plants and may be found on almost any kind of tree or shrub.

Leaf-roller on Maple (*Cenopis pettitana*, Rob.). While at Chelsea, Que., on May 27, I noticed that the leaves of many of the hard maples had been rolled and tied by a small green caterpillar with a brownish head and a dark dorsal

vessel. When full grown the larva is about half an inch in length. The specimens which I collected pupated on June 2nd, and six moths of the above species emerged on June 19th. The moth is a beautiful little creature, and varies considerably in the colour of the fore-wings, some being of a pure shining white, others decidedly pale yellow. This tortricid also feeds on basswood, oak and rose. In 1899, I reared the species from *Tilia americana,* the moths emerging on the 15th of June.

The Fall Cankerworm was again abundant in the district, and at Chelsea, Que., basswood trees particularly were attacked. On May 27th the larvæ were almost full-grown. On May 29th the caterpillars were reported to be stripping apple trees near Hull.

Division No. 2, Orillia District—C. E. Grant.

The season of 1911 was not with me an insect year. It was remarkable for some very hot spells, making in fact a record for heat in this neighbourhood. It was also very dry in spring and early summer, these latter circumstances apparently not being encouraging to most insects.

Among the species most noticeable for their destructiveness were the following:—

June-Bugs (*Lachnosterna fusca*). These insects appeared in enormous numbers in early May, and though their destructive tendencies are practically over in the perfect state the work of their grubs was very noticeable in the lawn.

Cut Worms were very destructive, the larva of *Peridroma saucia* and *Hadena arctica* and *devastatrix* being most in evidence.

The Codling Moth (*Carpocapsa pomonella*) was very destructive, nearly all early apples having been infested with them. This was not a good apple year and 1910 was still worse in this neighbourhood.

The Currant Worm (*Nematus ribesii*) has been again very common. Most people will not use Paris green on the bushes, for fear of bad results, but I find a light solution perfectly harmless and very efficacious.

I have not added much to my collection this year on account of the poor season and the pressure of business. I have, however, quite a few unnamed species of *Lepidoptera,* which I should have liked to exhibit to the members, but circumstances will again prevent my being with you.

Division No. 3, Toronto District—A. Cosens.

During the past season I have been interested chiefly in the gall-producing species of insects, and other points of entomological interest have been noted only incidentally.

In the year 1906 I found a willow in High Park, Toronto, riddled by the Snout Beetle (*Cryptorhynchus lapathi,* L.). The same season this beetle was reported from Beamsville and Ridgeway by Prof. Zavitz. These were the first Canadian records for the species. Since their introduction these beetles appear to have increased in numbers very rapidly, and have now become a serious menace to our indigenous willows. During the past season a very large percentage of the willows examined were found injured more or less by this beetle. The species of willow most commonly attacked were *Salix nigra* and *cordata.* In a few cases these beetles were found boring in Aspen poplar (*Populus tremuloides*).

In the same park where the work of the willow-boring beetle was first noted clumps of Austrian Pine and Scotch Fir have been planted. These trees are being

very much injured by the attacks of the moth *Pinipestis zimmermani,* Grote. These insects were so plentiful during the past season that large masses of resin, exuded from the larva burrows, were to be seen on almost every tree. Since the larvæ pupate in these resin masses it should not be a difficult matter to check the ravages of this pest. So far as my observations go, our native pines appear to be immune from attack.

After the extremely hot week of the past summer the larvæ of the Lace-winged Flies (*Chrysopa*) were unusually abundant. These little creatures forced themselves on my attention first by inserting their mandibles into my neck under the collar. The swellings produced by the wounds were of about the same size as those caused by the stings of mosquitoes, but were more troublesome and of longer duration. It occurred to me on several occasions that the irritation caused by the bites of the lace-wings must just about balance their usefulness as destroyers of injurious insects. An observation, however, made in the grounds of the Normal School inclined me to regard the *Chrysopa* larvæ in a rather more favourable light. The trees in the grounds had been encircled by rings of some sticky substance, producing an effect that might easily create the impression that the Minister of Education and his colleagues had been sugaring for moths on a large scale. Numbers of larvæ and small insects of different species were skirting these impassable

Fig. 9. Lace-wing Fly (*Chrysopa*) and eggs.

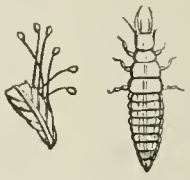


Fig. 10. Larvæ and eggs of *Chrysopa.*

barriers on the trees and among the bewildered masses the Chrysopa larvæ were having good hunting. A Tussock moth larva that was squirming in a rather unusual way was found to have two of these insect snapping-turtles clinging to it; one had secured a firm hold at the front of the head, just above the line of the eyes; while the other had gripped the side of the body near the posterior end. A desire to secure the antagonists as specimens made the combat an undecided one, but the lace-wings certainly appeared to be getting the better of the argument. So firm was the hold of the one that had attached itself to the head that the mandibles did not relax when the combatants were dropped into a beaker containing chloroform. It seems worthy of note that two *Chrysopa* larvæ should attack the same Tussock larva. Did it indicate preconcerted action on the part of the attackers? Or are we to suppose that the mentality of these larvæ has reached the stage where the value they set on anything is in proportion to the extent that it is being sought after by others? Whatever may be the explanation it seems to have a close parallel in the incident related by Sir Ernest Shackleton. He states that a very little experience taught his dogs that a penguin was more than a match for them one at a time and that they must unite their forces. In future attacks, while one dog threatened the bird from the front another would make the real attack from the rear, and after the adoption of these tactics the dogs had to be closely watched to prevent them killing large numbers of the birds. It augurs well for the success of the *Chrysopæ* against the Tussocks that they have adopted

the plan of combining their forces. They appear to understand the importance of the "Law of the Jungle," as stated by Kipling. "The strength of the pack is the wolf and the strength of the wolf is the pack."

The galls produced by Sawflies were very plentiful on the willows this season. *Salix cordata* appears to be scarcely ever free from the attacks of *Pontania pomum*, Walsh and *Salix alba* quite as frequently infested by *Pontania hyalina* Norton, while *Salix discolor* can often be with certainty identified from the fact of the leaves almost always carrying the spherical galls of *Pontania pisum*. So close is the restriction of the sawfly gall producers to definite species of willow that this fact is often of assistance to the botanist in identifying doubtful trees. This is especially the case if the species under consideration is not in fruit. There are four undescribed species of sawfly gall producers in this locality, each of which appears to be restricted to a single species of willow. The petioles and midribs of the leaves of *Salix lucida* are frequently enlarged into spindle-shaped fleshy galls, while the petioles of *Salix humilis* bear a similar but much smaller gall. *Salix serissima* is found in only a few stations in the vicinity of Toronto, but wherever found this tree is infested by a new species of *Euura* that produces somewhat spherical shaped

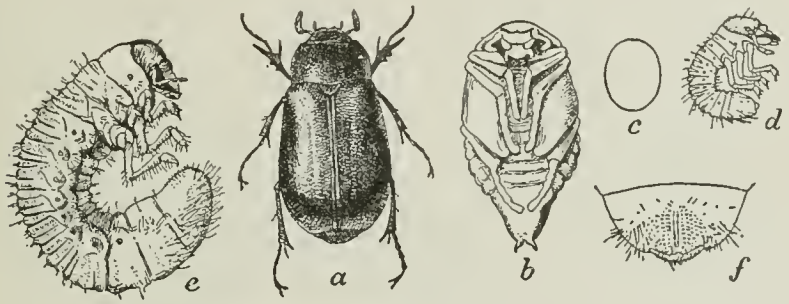


FIG. 11. White-grubs—*a*, beetle; *b*, pupa; *c*, egg; *d*, young grub; *e*, mature grub.

galls on the petioles of the leaves and less frequently on the peduncles of the pistillate catkins. The leaves of *Salix humilis* are scarcely ever free from the attacks of an undescribed *Pontania* that produces a gall somewhat similar to the species *pomum*, but it is smaller, densely pubescent and often found in clusters of from three to five. Specimens of the producers of three of these galls have been sent to S. A. Rohwer, Smithsonian Institution, and will be described by him in a paper soon to be published. Up to the present attempts to rear the producers from the galls on the petioles of *Salix humilis* have been unsuccessful.

DIVISION NO. 4, EAST TORONTO—C. W. NASH.

The early part of the year 1911 was cold and backward, consequently insects were scarce and inactive; butterflies, moths and dragonflies particularly so, until the beginning of July, at which time I saw the first MONARCH of the season, a rather bedraggled specimen, which looked as if it had experienced rough times on its journey from the south. At no time was this butterfly as abundant as usual. The White CABBAGE BUTTERFLY was noticeably scarce in this district, so but little damage was done by its larvæ. Whether the diminution of its numbers was caused by an increase of parasites or unfavourable weather conditions, I am unable to say. I did not, however, notice an unusual number of parasitized chrysalids.

The worst garden pests of the year were the TARNISHED PLANT-BUG and the larvæ of *Gortyna cataphracta,* both of which seem to be increasing; they are exceedingly difficult to check without constant and close attention, so that the production of fine flowers in this neighbourhood is attended with more than the usual difficulty and disappointment. No blossom buds seem to be immune from the attack of the Tarnished Plant-bug and any stalk large enough to hold them affords home and food for the larvæ of *Gortyna.* Pasture fields, lawns and strawberry beds were terribly injured by WHITE GRUBS (*Lachnosterna*). These larvæ have been increasing rapidly during the last few years and will undoubtedly continue to do so as long as favorable breeding grounds are provided for them. The constantly increasing area of land left under sod, affords ideal conditions for the propagation of this species and unless its natural enemies become more numerous than they are at present, or our grass lands are more frequently broken up, the damage inflicted by this grub will be very serious indeed.

MOSQUITOES were both abundant and attentive to their business all through the summer, though most of them examined by me had upon their bodies several parasitic mites (perhaps a species of *Trombidium*). I hope these had the ability to make the mosquitoes as unhappy as the mosquitoes do us. Whatever may be the final effect of the parasite upon its host, it certainly in the meantime causes no discordant note to mar the mosquito's music, nor does it impair its appetite.

FIG. 12 White-marked Tussock Moth, male.

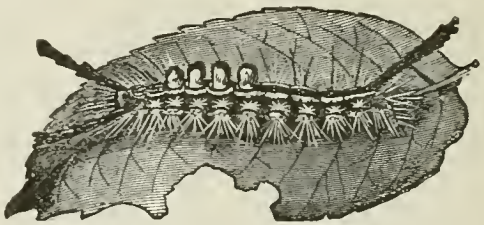


FIG. 13. Larva of Tussock Moth.

THE TUSSOCK MOTH larvæ became fully developed and entered the pupal stage much earlier than usual. On the 21st of July, I found the first completed cluster of eggs and almost daily after that I found others. As in some places the Tussock Moth is said to be double brooded, I gathered a considerable number of these early egg clusters, but none of them hatched. It is just possible, however, that these eggs were not fertilized, for strange to say this season out of over one hundred chrysalids kept by me not one male moth was produced, nor have I seen one anywhere at large. A very large proportion of the larvæ and cocoons gathered were parasitized by TACHINA FLIES of several species, but Ichneumon flies were entirely absent. Previous to this year species of *Pimpla* were the common parasites on the Tussock Moth: in my experience, outnumbering the Tachinids one hundred to one.

It is generally supposed that the Tussock Moth cocoons are always found upon the trunks and branches of trees, or on walls and similar places. I find, however, that on certain small-leaved deciduous trees, such as Birch, the larvæ will fasten a leaf to its twig and spin its cocoon therein. These leaves hang on the trees all through the winter and from them in many cases great numbers of caterpillars were produced. These hanging leaves were overlooked by the people employed to gather cocoons. Several times I found the larvæ of *Chrysopa* feeding upon injured and dying Tussock larvæ, and have often found their pearl-like cocoons in the cocoon of the Tussock Moth.

One of the Soldier Bugs, *Perilloides claudus,* appeared in considerable numbers this year in the potato fields, where it fed upon the larvae of the potato beetle. Early in August I found several of these bugs in the nymph stage feeding on Tussock Moth larvæ. *Claudus* has never been a common insect in Ontario, and why it should have become abundant and so generally distributed this year is a mystery. Any natural enemy of the Potato Beetle will certainly be welcomed in Ontario, and it is to be hoped that having gained a foothold here it will increase and multiply sufficiently to keep in check one of our most expensive and troublesome insect pests.

The only new insect taken by me this year is an Arctian, evidently of the genus *Apantesis.* This I have as yet been unable to identify.

Division No. 7, Niagara District—R. C. Treherne.

I have the honour to present my second annual report for the Niagara District.

A movement of great importance to the Entomological interests of Ontario has, during this past season, taken place in the Niagara District. Through the courtesy of the Provincial Department of Agriculture for Ontario, the establishment of a field station for Entomological investigation, under the Division of Entomology of the Dominion Department of Agriculture, has been made possible. Office space has been allotted to the Field Officers of the Division of Entomology, at the Provincial Experiment Station, situated at Jordan Harbour, Ontario.

Acting on the instructions of Dr. Hewitt I have had the pleasure of making this office my headquarters for a few months this summer. It is to be hoped, henceforth, that this field station will be the basis for much useful work, for the province of Ontario in particular.

The Weather.

The weather throughout the Niagara District has been more or less favourable to fruit production, and well suited to insect life. The Spring was especially favourable for blossoming, and fruit set well. Most of the insects common to fruit put in their appearance in advance of the ordinary season. Severe drought and extreme heat were experienced in July. From Meteorological Observations of Jordan Harbour, July 3rd, with a maximum temperature of 103 degrees F. proved the hottest day, while the last day of frost, from the same observations, proved to be May 3rd.

The following dates show the days on which frost was experienced this Spring (1911):—

March 28th—April 3rd, below 32 degrees F; April 4th, 7 a.m. 24 degrees F., 6 p.m., 30 degrees F; April 8th, 7 a.m., 31 degrees F., 6 p.m., 35 degrees F; April 9th, 7 a.m., 31 degrees F., 6 p.m., 37 degrees F; April 11th, 7 a.m., 32 degrees F., 6 p.m., 37 degrees F; April 24th, 7 a.m., 32 degrees F., 6 p.m., 40 degrees F; May 3rd, 7 a.m., 30 degrees F., 6 p.m., 32 degrees F.

The Meteorological Records of the six months (March till August) were as follows:—

	Average Maximum.	Average Minimum.	Rainfall in Inches.
	F.	F.	
March	32.37	25.93	2.61
April	*	36.44	.58
May	74.77	50.32	1.97
June	72.28	56.13	3.43
July	82.56	63.83	2.86
August	76.02	60.63	2.10

Attacking Fruit Trees.

San José Scale (*Aspidiotus perniciosus*). While the area of infestation does not appear to have decreased to any extent, it may be supposed that the constant spraying, which process may now be considered the rule and not the exception, among the great majority of fruit growers in the Niagara District, is affecting its numbers. The district south and east of St. Catharines still remains the worst infested. There are a great many old apple orchards in these districts, and they harbour the San José to a very marked extent.

Owing to the extensive and energetic operations of the National Land, Fruit and Packing Company—a Company which in the last year has rented large numbers of apple orchards throughout Ontario, and to a large degree around St. Catharines and in the district south, and which has pruned, reheaded and sprayed these infested orchards, many of which are under their control—we shall no doubt find, in a few years, marked results against the Scale, and, for the good of the district as a whole. We sincerely hope so.

Excellent results, ending with the complete destruction of the Scale have been evidenced this last year by two applications of Commercial Lime Sulphur at the 1-10 strength, before the buds fully burst in the Spring and when the ground was still frozen. Single applications of 1-10 in the early Spring have not given the best results, probably owing entirely to the degree of efficiency in application. A single application of 1-8 or stronger has been recommended, and is now being recommended as efficient, by local Inspectors. But it would appear that the fault does not lie in the strength of the application so much as in the degree of efficiency of application, consequently on a badly infested tree and especially on a large number of trees, I would prefer two applications of 1-10 or even weaker to a single application of 1-8 or stronger.

Codling Moth (*Carpocapsa pomonella*). It has been predicted that owing to the failure of the apple crop of 1910, we would notice a marked decrease in the percentage of "wormy" apples this year—because it was supposed a lessening in food supply would in turn affect the numbers of the moth. I have not seen any direct evidence of this coming about, but it is true I have not sufficient data at hand. I had occasion to be away from the Niagara District at the time when the second brood was in operation, consequently I have no facts to guide me. If the

* The maximum thermometer was broken, and no maximum records were kept from March 20th till May 18th. Consequently the average for March is too low, while the average for May is too high.

prediction has proved to be true, it is curious to note that a provision of nature this Spring helped to restore the balance to which we are more or less accustomed. It can be seen from the Meteorological Records that the Spring was dry and more or less warm, and devoid of late frosts at the time of blossoming. The apples set well, the various varieties blossoming conjointly, and development taking place very rapidly. Just at the time, after blossoming, when the developing fruits are recommended to be sprayed, rain came and continued for a few days, interfering with the process of spraying. It would be fairly estimated that not more than 50 per cent. of the apple growers sprayed during the important week following the fall of the blossoms. The week of May 22nd was the time when the blossoms fell from apples on the average for the whole district.

The Plum Curculio (*Conotrachelus nenuphar*). This insect was exceedingly prevalent this year. I do not believe that it is given its due consideration by the majority of the fruit growers in the district, as being one of the most satisfactory means of reducing the profits and yield of the various fruits in their orchards. It is well known and very much dreaded by a great many, but from the fact that it causes fruit to drop, its importance is to a large extent lost sight of.

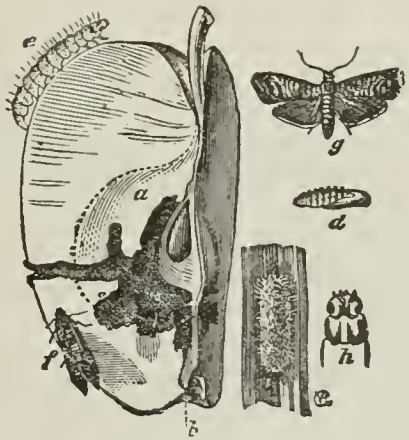


Fig. 14. Codling Moth and its work, showing the different stages.

In the first four days of July of this year I examined a total of 3,300 apples between Jordan and St. Catharines. At this time of year, before the development of the second brood of Codling Moth had taken place, 15.06 per cent. of the apples were infested with Curculio while 7.99 per cent. were attacked by Codling Moth.

In a few days I had occasion to visit the Ridgeway and Fort Erie District, and there examined a total of 3,100 fruits and found that 6.8 per cent. were infested with Curculio as against 7.4 per cent. with Codling Moth.

Summarizing the work in thes two districts, at this time of year,, I found that, estimating from a percentage of fruits from 1,955 trees, with an estimated crop of 1,310 barrels, the Curculio infested fruit would fill 161.25 barrels, that Codling Moth infested fruit would fill 103.25 barrels (i.e., provided that fruit was allowed to mature), while 787.36 barrels would be clean fruit. These figures were obtained from the fruits on the trees at the time of examination. If the fallen fruit had been taken into consideration, the increase in the percentage of Curculio infested fruit would have been most marked, because many fruits had fallen, and the cause of their falling had to some extent been due to Curculio attack. For

instance in an orchard examined in Vineland, at the same time as the above, I found that of the fallen apples 38 per cent. were infested with Curculio larvæ, while of the apples adhering to the trees only 16.6 per cent. were infested.

In order to estimate, with a certain degree of accuracy, the percentage of Curculio larvæ that fall to the ground in the early part of the summer with the small fruit from the tree, I endeavoured to keep a record of the "drop" from one particular Burbank Plum tree, with the following results:—

PLUMS. — Date.	Total Fallen Fruit picked up.	Total fallen from natural reasons.	Total fallen with crescent punctures.
June 20	1,027	924	103
June 25	739	573	166
July 1	250	113	79

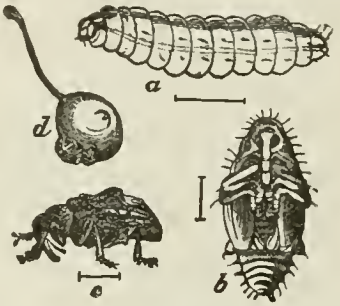


FIG. 15. Plum Curculio—
a, larva; *b*, pupa; *c*, beetle;
d, young fruit attacked.

From an examination of the plums derived from the final column in the above table, I found that:—

	No larvae development.	Distinct larvae preseut.
Of the 103 plums	32	71
Of the 166 plums	17	149
Of the 79 plums	21	58

On July 2nd I examined the fruits remaining on the Burbank Plum tree, the same as upon which the above records were taken, and found on examination of 300 fruits that only 17 showed the presence of Curculio larvæ, a percentage of infestation of 5.66 per cent. We note, therefore, that there is a lessening in percentage of infestation as the season advances, consequently the attack of the Curculio passes unnoticed by the ordinary fruit grower.

The attack causes a certain beneficient degree of natural thinning, it is true, but this manner of accomplishing this important detail in successful horticulture is not correct from economic reasons. As a result of these remarks I do not wish to overrate the importance of the Plum Curculio as compared to the Codling Moth, but what I wish to emphasize is the fact that this former insect is worthy of more detailed study and greater regard by the fruit grower.

Shot-hole Borer (*Eccoptogaster rugulosus*). This year again this borer has caused the fruit growers a great deal of trouble. While the remedy is difficult, the prevention is easy. There is no cause in any attack I have seen which could not be assigned to a pile of lumber, or brush left in close proximity to the trees. From mere general observation it would appear that attacks are more often experienced by fruit growers immediately bordering on the lake. The habit of throwing orchard trimmings over the edge of the cliff into Lake Ontario is a bad one, and no doubt accounts, to a certain degree, for the attack of this particular insect.

Blister Mite (*Eriophyes pyri*). This insect has become localized in certain apple orchards south of Vineland and west of St. Catharines, but so far as the Niagara District is concerned it has not become a general orchard pest.

Woolly Aphis (*Schizoneura lanigera*). I have noted a probably slight increase in the prevalence of this insect in a few orchards, but so far as the district as a whole is concerned it still remains a general orchard insect of minor importance.

Green Fruit Worms (*Xylina sp.*) were commonly noted in the Ridgeway and Fort Erie District, and did a considerable amount of damage to young maturing apples.

Spring Canker Worm (*Paleacrita vernata*). The work of this insect was brought to my notice on June 8th. It has become localized in several apple orchards south of St. Catharines.

Fig. 16. Peach Tree Borer—1, female; 2, male.

Peach Tree Borer (*Sanninoidea exitiosa*). This insect is again attracting the attention of progressive fruit growers. At the request of several fruit growers I have had occasion to visit orchards attacked by this insect. In one orchard, in particular, 80 per cent. of young four-year-old peaches were attacked. According to the testimony of Mr. John Read, formerly orchard inspector of the Beamsville District, ten years ago this borer had been considered a most serious pest. In fact, it had been at one time a part of the general farm routine to make examination for, and excavate, the larvæ from the crown of the trees. In more recent years this practice had ceased, owing to the increase in price of adult labour, and the inefficiency of boy labour. It is hoped that a proper watch will be maintained by the fruit growers on this important insect.

According to observations from material at hand this year, the first males emerged on July 12th and the first females on July 14th. It is necessary, therefore, to adopt precautionary measures at this time against the oviposition of this moth.

Cherry Tree Slug (*Eriocampoides limacina*). In the early part of the summer it was noticed that this insect was showing evidence of becoming particularly serious this year. Its appearance was very much earlier than usual owing to the extremely hot and dry weather of the spring. Owing to this, the process of spraying an arsenical was interfered with, because the fruit was ripe and ready to pick at the same time as the slug had reached, or nearly reached its full state of

growth. For fear of poisoning the fruit, many fruit growers omitted to take measures against the slug, in consequence of which, in some sections, this insect increased to an alarming extent, some trees having their leaves completely stripped of their green portions.

If such a condition recurs in the years to come, where it is inadvisable to spray with arsenicals, it will be found that handfuls of powdered soil and lime will act as a temporary remedy.

The slugs reached their full stage of growth (around Grimsby) about June 29th of this year, and where they were present in extreme numbers caused considerable annoyance to the fruit growers, by adhering to the cherries during picking. By July 2nd the great majority of the slugs had disappeared from the trees and pupated in the ground—a few slugs remained on the trees after this date, and an occasional one could be seen on the leaves at any time till the end of the month. The general emergence from the pupa of the adult and the consequent egg deposition began (around Grimsby) on July 28th and continued until July 31st. Field observations record the second appearance of larvæ on August 10th. At this time many fruit growers sprayed a second time, using lead arsenate at the rate of 2 lbs. to 40 gallons of water, and, according to the observations made on this insect by Mr. W. H. Wright, who carried on the work at Jordan in my absence, it was not strong enough, as the larvæ lived for several days with the leaves well-coated with the arsenate. At the Jordan Harbour Experimental Farm 6 lbs. to 50 gallons was used with good results, but this made spraying rather expensive.

Boring Wasp (*Cemonus inornatus*, Say). This wasp was in evidence again this year, attacking newly-headed Peach, Plum and Cherry trees. No material damage resulted.

Attacking Small Fruits and Vegetables.

The Cane Borer (*Agrilus ruficollis*) and the Sawfly (*Monophadnus rubi*) were reported as affecting Raspberries this year, the former from the Port Dalhousie District, and the latter from the Stoney Creek District. The Snowy Tree Cricket (*Oecanthus niveus*) has been abundant again on Raspberries.

The two Asparagus Beetles (*Crioceris asparagi* and *C. 12 punctatus*) have also caused annoyance in certain sections.

A predaceous pentatomid (probably *Perillus bioculatus*, Fabr., variety *claudus*, Say), as mentioned by Dr. C. J. S. Bethune in the "Canadian Entomologist" Vol. XLIII., Septr., 1911, page 320) has been very commonly noticed attacking the larvæ of the Colorado Potato Beetle. Its presence has attracted the attention of many farmers, but its control has not been sufficient to allow the abandonment of the usual arsenical spray for the beetle.

The Pea Moth (*Semasia nigricans*) was in evidence this summer, but, in numbers, not to the same extent as some years preceding. It would appear, from general observation, that the late varieties of Peas are the most liable to attack. These are mostly English varieties, such as Yorkshire Hero, Shropshire Hero, Carter's Daisy and Fillbasket. At the Jordan Harbour Experimental Farm the last picking of early Peas took place about June 30th, and the first picking of late Peas about July 8th.

Both the Zebra Caterpillar (*Mamestra picta*) and the worm of *Pieris rapae* were prevalent on the Cabbage this Summer at Jordan, and destroyed a large number of marketable heads. The Root Maggot, also on Cabbages, has been most

destructive. Fairly effective treatment has been devised by the use of 4 oz. Carbolic Acid to the gallon of water, and this poured around the plant.

I have to thank Dr. C. Gordon Hewitt, Dominion Entomologist, for kindly allowing me to incorporate these notes, which were obtained under his authority.

Prof. Jarvis: The Curculio and Blister Mite are two pests neglected by the average grower in the Niagara district. Many are now looking after the Codling Moth, but are neglecting these. I think the Blister Mite is more common than Mr. Treherne reports. In nearly every orchard I have been in this year the Blister Mite is very common.

Dr. Hewitt: It is found in Quebec, too.

Mr. Cæsar: I think Mr. Treherne is not correct in his belief that the complete failure of an apple crop in an orchard does not lessen the number of Codling Moth for the next year. I visited a fifty-acre orchard near St. Catharines this fall, and was surprised to find scarcely any Codling Moth, especially as I had pretty good reason to believe that the spraying was not very thorough. I have since been informed that a year ago there was almost a total failure of apples in the orchard. I am expecting next year to hear of some remarkably clean orchards out towards Lake Huron, where there has been a failure of the apple crop last year, and to a considerable extent this year, too.

SOME OF THE WORK OF THE DIVISION OF ENTOMOLOGY IN 1911.

C. Gordon Hewitt, D.Sc., Dominion Entomologist, Ottawa.

In continuation of the practice which I started last year, it is my intention to describe briefly to you some of the more important aspects of the work of the Division of Entomology during the past year. I know that the members of the Society are interested in the work that we are doing, and a discussion of the problems confronting us cannot but be productive of beneficial results.

First, I should like to briefly refer to the additions to the staff of the Division during the past year. Mr. John D. Tothill, and, more recently, Mr. Wm. A. Ross, both graduates of the Ontario Agricultural College, have been appointed as field officers. Mr. Germain Beaulieu has also been similarly appointed. With such keen and loyal assistance on our staff of field officers as Mr. R. C. Treherne, Mr. Geo. E. Sanders, Mr. John D. Tothill, and Mr. W. A. Ross, all graduates of this college and special students in Entomology, I cannot allow the opportunity to pass without expressing our indebtedness to Dr. Bethune, their teacher, for turning out men with such an excellent training, a training which enables them to tackle problems the solution of which may have a most important bearing on Canadian agriculture or horticulture. I hardly like to think what we should do without the Entomological Department at Guelph for our supply of men. Another appointment of great importance which has been made is that of Professor J. M. Swaine as Assistant Entomologist. Professor Swaine's valuable work on the Scolytidæ is well-known to all of you, and it is my intention that he shall have charge of the forest insect work. The importance of investigations on forest insects in relation to the conservation of our forest in Canada lends great significance to his work and the possibilities of its further development. A beginning has been made of a scheme of establishing field laboratories in different regions according to the requirements of those regions. Through the kindness of the

Ontario Department of Agriculture the Division has been allowed the use of an office in the Jordan Harbour Experiment Station, and during the past summer Mr. R. C. Treherne commenced several investigations on the Plum Curculio and other insects, a brief account of which he gave in his report as Director of Division No. 7. Mr. Treherne has now been transferred to British Columbia to take charge of our work there, and next season Mr. W. A. Ross will continue his work in Ontario, when it is my intention that he shall work on the Apple Maggot, Plum Curculio and such other more serious species as may be determined later. It is proposed to extend this system of field laboratories and to establish one in Nova Scotia, another in New Brunswick, where Mr. Tothill will continue his investigations on Tachinid parasites with especial relations to the Brown-tail Moth. I might mention here that we have started, through the kind co-operation of Dr. Howard, the importation of the European Tachinid, *Compsilura concinnata*, a parasite of the Brown-tail and Gipsy Moths, in the hope that it may become established before the Brown-tail Moth attains any considerable magnitude in New Brunswick. We hope also to have a field laboratory in Quebec, and a fifth in British Columbia, where Mr. Treherne will carry on investigations on the Lesser Apple Worm, Capsid Bugs and certain of the more injurious fruit insects of that Province.

During the past summer one of our chief investigations has been the study of the parasites of the Spruce Budworm, to which work Mr. Sanders has devoted most of his time. Arrangements were made for supplies of infested spruce, balsam, etc., to be sent to the Division from different parts of Quebec and British Columbia, and this material was used in our parasitic studies. In January and February I visited a number of the more severely infested localities in Quebec, such as Lake St. John region and the Rouge River, for the purpose of making field observations. Reports were also obtained during the summer from the lumbermen and others with regard to the depredations of the Spruce Budworm during the past season. As a result of these observations and reports, conjoined with our study of the parasites, we have been able to conclude that the result of the depredations of the insect will not be of so serious a nature as many of the lumbermen and limit-holders were inclined to fear. In fact, in some regions the parasites had effectively gained control of the pest, and it is these parasites and their habits that we have been studying. The most effective parasites would appear to be the egg parasites, the chief of which is *Pentarthron minitum*, which Mr. Sanders has studied specially, and its habits and deadly effect may be gathered from the following examples: In one lot of eggs which he collected at Ottawa he found 77 per cent. of the eggs parasitized by this species, and the eggs contained on an average over two parasites per egg. In 33 egg masses there were 370 eggs, 286 of these eggs were parasitized and produced 639 parasites. Egg masses collected at Maniwaki, P.Q., were similarly heavily infested: 93 egg masses contained 1,192 eggs, of which 902, or 75.6 per cent., were parasitized, 2,167 parasites emerged, or an average of 2.4 parasites per egg. The larger ichneumon and other parasites were also abundant. From insects collected near Esquimault, B.C., the percentage of parasites obtained was 43, and an equally high percentage was found in collections made in Quebec. A species of *Apanteles*, hitherto undescribed, was abundant, both in Quebec and British Columbia.

As a result of these studies we were able to calm the fears of those persons on whose timber limits the depredations were noticed for the first time last year, as the pest appeared to be spreading in an easterly direction and more reports were received from the south side of the St. Lawrence.

Our studies of the parasites of the Larch Sawfly were again continued, and observations on the life-history of the useful Chalcid, *Cœlopisthia nematicida*, Pack., were recently published in "The Canadian Entomologist."

An attempt was made to introduce the useful European parasite *Mesoleius aulicus* which appeared to have been so effective in England. During a visit which I am shortly about to make to England, arrangements will be made, if possible, for the importation of the parasitized cocoons of the Sawfly, with a view to establishing the European parasite in Manitoba, from which Province we have had reports during the past years of serious depredations by this insect, and it appears to be spreading westward.

During the past year the work under the Destructive Insect and Pest Act has increased considerably. At the end of the last importation season, which closed about May, we had inspected over four million plants for the winter nests of the Brown-tail Moth and evidences of the Gipsy Moth. It might be of interest to mention that during the present season we have found dead pupæ of the Gipsy Moth on Azaleas imported by an Ottawa firm from Belgium, showing the possibility of the carriage of these insects in a living condition and the importance of this inspection work. A very systematic inspection of the whole of the territory in Nova Scotia infested by the Brown-tail moth was made last winter, and it was found that the insect occurred in Yarmouth, Digby, Annapolis and Kings counties. A considerable infestation was discovered at Weymouth, where some very large winter nests were found. Mr. Sanders counted over 1,800 caterpillars in one of these nests, which indicates how essential it is to collect even single nests. This large infestation at Weymouth was undoubtedly due to the fact that the insect had been allowed to increase during one or two seasons. In my address to you last year I mentioned to you the fact that a single egg mass of the Brown-tail Moth had been found in New Brunswick, indicating that this insect was at last breeding in that Province. During the last winter season nests were found at Pomeroy Ridge, in Charlotte County, N.B., and a survey of that region was made under Mr. Sanders' direction, when nests were found throughout the south-western section of Charlotte County, indicating that the insect has at last arrived in force in New Brunswick. We are increasing the number of inspectors in both these Provinces during the present winter, when the whole infested area will be carefully scouted.

I have only indicated to you very briefly a few of what I think are the more interesting lines of work which we have been carrying on. Mr Treherne has indicated in his report some of the work which has been carried on in Ontario, and, had time permitted, I might refer more particularly to a number of the more interesting pests which have been reported to us during the past season. But the programme is a long one, and these will be described as usual in my annual report. I might refer, however, in closing to the fact that we have had a combined insectary and work-room erected at Ottawa for experimental work, the insectary being of the open-air type; that is, instead of glass, fine wire screens have been used, by means of which a more even and normal temperature can be obtained.

INSECTS OF THE SEASON IN ONTARIO.

L. Caesar, B.A., B.S.A., Guelph.

Orchard Insects.

Codling Moth (*Carpocapsa pomonella*). The Codling Moth has in most districts caused about the usual amount of loss, though in a few localities even unsprayed orchards were very little attacked. Each year more of our fruit-growers learn how to combat this pest successfully. An excellent example of what is possible from thorough spraying right after the blossoms fall was shown in the 40 acre orchard of Mr. Jas. E. Johnson, of Simcoe. Mr. Johnson has sprayed his orchard carefully for several years. This year he had a gasoline power outfit and used lime-sulphur and arsenate of lead. Fully 99.5 per cent. of the apples were free from worms. Some neighboring orchards were almost 80 per cent. wormy. Two orchards at Rockwood, sprayed by Mr. Chas. Good, my assistant, and myself this spring, when visited during apple-picking time this fall, appeared to be about 95 per cent. free from worms, even on Spy trees which in many cases had not more than half a barrel to a tree. These orchards had not been sprayed for at least ten years.

Plum Curculio (*Conotrachelus nenuphar*). I have received fewer complaints of fall injury from Plum Curculio to apples this year than last, though there was considerable in some orchards. It was moderately abundant on plums and cherries.

Oyster-shell Scale (*Lepidosaphes ulmi*). This, our most common scale insect, is being rapidly brought under control by the application of lime-sulphur before the buds burst.

San José Scale (*Aspidiotus perniciosus*). In counties like Kent and Essex, where San José Scale has been very prevalent, and where very promising orchards have been allowed to go uncared for, a renewed interest in spraying has arisen, due chiefly to the splendid results being obtained in many quarters from the care of orchards and to the eagerness of companies to rent or buy them. The presence of district representatives, too, has had a remarkable result in giving owners of apple orchards encouragement and helping them to control the scale and bring back their orchards into good bearing.

Blister Mite (*Eriophyes pyri*). This pest has continued to spread, and owing to the very dry season, injury from it was much more conspicuous this year than usual. From badly attacked trees, even as early as July 1st, the foliage had begun to fall. Excellent results against this mite have been obtained by the use of lime-sulphur shortly before or as the buds are bursting.

Aphids (*Aphis avenae*, chiefly). During May we received numerous letters telling us that these green lice were very thick on the twigs and opening buds and asking for information as to what to do. We replied that they could be killed by sprays of kerosene emulsion, whale-oil soap or Black Leaf 40, but that we had strong hopes that if the weather continued fine they would soon disappear. It was, therefore, with great pleasure that we observed that almost immediately after the very hot weather of the last week of May almost all the Aphids disappeared. This result seemed to have taken place over at least most of the Province, and probably over all of it.

Cigar Case-bearer (*Coleophora fletcherella*). In a large number of orchards this year the Cigar Case-bearer was very abundant and destructive. This is one of the pests fairly easily controlled by spraying just before the blossoms burst.

Bud Moth (*Tmetocera ocellana*). Like the Cigar Case-bearer, this insect also did much damage. It seems to me that economic entomologists pretty generally feel that it is about time we were devoting more attention to this insect than we have done in the past, as present methods of control seem scarcely satisfactory. I have, however, been surprised this fall to find that, though the Bud Moths were quite abundant in the spring, yet around the College, even on unsprayed trees, there is scarcely a leaf attacked on some of the trees. Probably parasites have been very active. This, however, is not true of the whole province, for in some localities there was much evidence of their presence this fall.

Leaf Rollers (*Archips rosaceana*) and at least one other, to me, unknown species were exceptionally common in many orchards, and did much damage by feeding on the young fruit of apples and pears, once this was formed.

Palmer Worm (*Ypsolophus pomotellus*). This insect is very rarely mentioned by Canadian writers and is not well-known to the growers. It has, however, been present in considerable numbers in some orchards for several years. This year it was unusually prevalent, and several complaints were sent in of its feeding upon the fruit. Many of these complaints were correct, but in some cases the injury was done by Tussock Moth caterpillars. The Palmer Worm larvæ this year were doing most damage about a week or ten days after the Codling Moth spray had been applied. We are frequently told that these insects pupate in the leaves. This is rather misleading, for in our experience more than half of them

Fig. 17. Bud Moth and larva.

Wings open.

Wings closed.

Fig. 18. Leaf Roller Moth (*Archips rosaceana*).

pupated in the soil and the rest on the leaves. The customary application of a poisoned spray just before and immediately after blossoming should control this insect easily if thoroughly done.

White-marked Tussock Moth (*Hemerocampa leucostigma*). As indicated above, this insect was very common in some orchards this year, and not only destroyed much of the foliage in the centre of the tree, especially on the young water sprouts, but also did much damage to the fruit by eating irregular areas out of it.

Climbing Cutworms (not identified). In a few localities Climbing Cutworms were troublesome, especially on young apple trees. Sometimes these worms feed on the fruit as well as the foliage.

Anametis grisea. This Snout-beetle was again found attacking the foliage in the same apple orchard in Prince Edward county as last year. Very little injury was done.

Apple Maggot (*Rhagoletis pomonella*). We have had one man, Mr. W. A. Ross, a recent graduate of this College, devoting his whole time to the study of this apple pest. A great deal of useful data has been accumulated this year, and, as the work is to be continued next year, we hope to be able next fall to give a comprehensive account of the insect and of the best methods of control.

Capsids. We have this year reared several specimens of Capsids about the size of the Tarnished Plant Bug that have been found attacking the apples when

quite small and causing from one to ten ugly scars on each fruit where they punctured it when feeding. So far as we could see all the damage was done by the nymphs. We hope to do some work on this subject next year, as it is one of great interest and no small economic importance.

Pear Psylla (*Psylla pyricola*). We planned out and applied a series of experiments this spring to test the value of lime-sulphur in the control of this tiny but very destructive insect. To our surprise it almost completely disappeared from some unknown cause, so that our experiments were useless. There seems to be no doubt, however, that a very thorough spraying with lime-sulphur just before the blossoms open will hold the insect under thorough control. Professor Parrot, of Geneva, N.Y., has had excellent results from this late application of lime-sulphur.

American Tent-Caterpillar (*Malacosoma americana*). In the eastern counties of Ontario this insect has been rapidly increasing in numbers for the last two years. This year it has done much damage in some unsprayed orchards. At Guelph, too, it is becoming much more numerous than it has been for years, but

Fig. 19. Tarnished Plant Bug—much enlarged.

it is not nearly so common yet as farther east. The probabilities are that we may look for a bad outbreak next year east of Kingston and a great increase in numbers over a large part of the province.

Peach-tree Borer (*Sanninoidea exitiosa*). Most of our peach orchards are fairly free from this borer, but here and there during the course of the season, while examining orchards for Little Peach and Yellows, I came across one where the borer was very destructive, especially to young trees.

Tarnished Plant Bug (*Lygus pratensis*). Some of our nurserymen have complained about an insect that kills the buds of peach trees in the nursery. Examination of the injury seems to indicate that the Tarnished Plant Bug is the offender. There is need, however, of some further investigation on this subject. Another complaint made against this insect this year was that it punctured the tender growing tip of Asparagus plants. I saw these injuries near St. Catharines in August, and think the grower is probably quite correct in his claim that the Tarnished Plant Bug is the offender.

Bush Plants and Vegetables.

Currant Borer (*Sesia tipuliformis*). This borer is very abundant in many currant plantations. Just how much damage it is doing is difficult to estimate. The last week in June and the first in July this year adults were easily captured on the foliage. The best means of control seems to be to cut out and burn the old canes in early spring when pruning, and allow new canes to take their place. A cane should not be allowed in badly infested plots to remain longer than two or three seasons.

Currant Saw-fly (*Pteronus ribesii*). This very common pest did not seem to be quite so abundant at Guelph as in previous seasons.

Currant Aphis (*Myzus ribis*). This aphis was much less numerous at Guelph than for some years back.

Red Spider (*Tetranychus bimaculatus*). The Red Spider does a great deal of damage to currants and raspberries, but was not so common with us as last year. We have got good results from the use of lime-sulphur against it.

Raspberry Root-borer (*Bembecia marginata*). At Grimsby, August 8th, while examining raspberry roots with the object of discovering the cause of a peculiar curling of the leaves which has been quite common in the district and

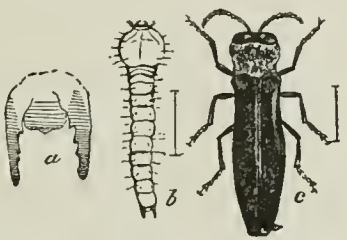


Fig. 20. Red-necked Agrilus—*a*, horns at anal extremity; *b*, grub; *c*, beetle—all magnified.

has preceded the death of the plant, I found that nearly two-thirds of all the roots examined had been injured by this borer. It does not seem to have been the cause of the curling, at any rate in some cases, but was evidently very injurious to the plants. At this date most of the insects were still in the larval stage, but a few had pupated. No adults were yet visible. Such a plantation should clearly be ploughed up either early in spring or late in fall and the roots and canes collected and burned.

Red-necked Agrilus or Gouty Gall Insect (*Agrilus ruficollis*). I have seldom seen many canes attacked by this beetle, but this year, at Port Dalhousie, it was very common on red raspberries. The part of the cane above the gall had in most cases died, just as happens when they are attacked by the Snowy Tree-cricket (*Oecanthus nigricornis*).

Blackberry Leaf-miner (*Metallus,* sp.). This sawfly miner is still quite abundant in at least the Niagara district.

European Fruit Scale (New York Plum Scale) (*Lecanium corni—Eulecanium cerasifex*). Blackberry canes were very badly attacked in a few districts by this scale. Thinking that possibly it might not be *Eulecanium cerasifex* I sent it to Washington, and was informed it was the same insect, but that the name *Lecanium corni,* Bouche, was given to it now. This scale a few years ago

was very abundant on forest trees, but has not been nearly so much in evidence the last two years.

Cutworms and Army Worms. We have had the ordinary number of complaints of damage from Cutworms. From Monteith, in New Ontario, and also from Port Arthur and Parry Sound came complaints of countless numbers of the Black Army Worm (*Noctua fennica*). The correspondents said that they had destroyed all kinds of vegetation for several miles in extent. According to their reports poisoned bran was useless, as they would not eat it. Rolling the soil destroyed great numbers. I was not informed whether they tried furrows or trenches to check their progress. I had recommended these along with the poisoned bran and rolling.

Black Vine Weevil (*Otiorhynchus sulcatus*). This large weevil has been reported from several parts of Canada, and has been known in a number of instances to feed on Cyclamens in greenhouses, but, so far as I could find out, it has not previously been reported in Ontario as feeding on strawberries, though it has been reported as doing so in Nova Scotia, and frequently attacks them in Europe and also in Tasmania. In the latter country it is reported as being one of the two

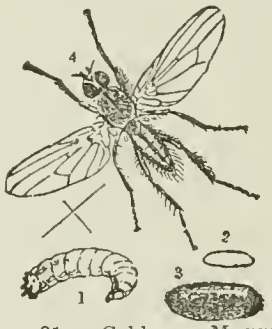


Fig. 21. Cabbage Maggot, puparium and fly—enlarged.

worst strawberry pests. Its attacks in the strawberry plantations on the College farm at Guelph became noticeable about the time the fruit was beginning to ripen and continued until most of the berries had been picked. The injury was done by the larvæ, which bored into the plant and devoured most of the crown, thus causing the plants to die. If one attempted to pull up these plants they always broke off at the injured part. Many of the larvæ, when my attention was called to the injury, were full grown and had worked their way an inch or two into the rich soil. A few had already transformed there into pupæ. In a few weeks those that were put into rearing cages emerged as adults. The larvæ are legless, stout, white to flesh-colored, usually curved, with brown head, body thickened medianly and slightly tapering towards each end. The length when fully grown is about two-fifths of an inch. The insects did not occur in very large numbers, and consequently the number of plants destroyed was probably not more than 100. The attack began on the rows nearest to where an old plantation had been ploughed up the previous year. Usually several plants near together would be attacked.

Root Maggots. As usual the Cabbage Root Maggot (*Pegomya brassicae*) has been very destructive. At Guelph we had also this summer for the first time in several years considerable loss from the Onion Maggot (*Pegomya cepetorum*). The Beet Leaf-miner (*Pegomya vicina*) was also fairly abundant. On the

Cabbage Maggot we tested several different substances, such as Clift's Manurial Insecticide, Apterite, Soft Coal Soot, and also the tarred-felt-paper discs. The latter alone gave satisfactory results, scarcely any plants being killed where the discs were used. We find that most of those who use the discs make one of several mistakes which interfere with good results. First, many use tar-paper instead of thin tarred felt-paper. Second, the discs are not put on soon enough after setting out the plants. They should be put on at once; the delay of a single day may allow the flies to lay their eggs before the discs are in position. Third, the cultivator is often used soon after the discs are put on and earth is thrown over them and against the plant. When this is the case the discs will in many cases not prevent injury. The earth should either be removed with a small whisk or the ground left uncultivated for about two weeks or more after setting out the plants. Fourth, the discs are not fitted neatly and closely around the stem.

Squash Bug (*Anasa tristis*). This insect seems to have done very little damage this year. Two years ago it threatened to become very abundant, but climatic conditions seem to have been unfavourable.

Perillus bioculatus, var. *claudus,* has been found in many counties this year. Evidently it ranged almost all over the southern and western part of the province, and, at least, as far east as Toronto. In some potato fields it was present in large

Fig. 22.
Perillus circumcinctus.

This insect closely resembles P. bioculatus, var. claudus.

numbers and destroyed many of the adult Colorado beetles and also the larvæ. Apparently it attacked the eggs also, but Mr. Baker and I were not quite sure on this latter point. Some farmers wrote saying that they did not have to spray their potatoes this year to destroy the Colorado beetles, and attributed their decreased numbers to this insect. *P. claudus,* both in the adult and nymph stages, feeds on the potato beetles. We found the insects in all stages: eggs, nymphs and adults. The eggs are black and quite conspicuous and laid in clusters on the leaves. The female adult differs from the male in having white or cream markings instead of red.

At Fonthill I found another Pentatomid feeding in the same way on the beetles and larvæ.

Grain Crops, etc.

Hessian Fly (*Mayetiola destructor*). In Peel county many fields of wheat were severely attacked by Hessian Fly. I gathered a considerable number of the puparia but only parasites emerged.

Chinch Bug (*Blissus leucopterus*). It was a surprise to us to find that the Chinch Bug was right in our midst last summer. In June the nymphs were found destroying the grass in a lawn in Guelph. Later on we obtained as many adults as we needed for class purposes from this same lawn. This is the first time

I have known of its being so far north. Two or three years ago, while on Institute work, a few farmers near Welland told me it had done some damage to their timothy. This year it has been reported from several parts of the province.

FOREST.

Chalepus rubra (?). While camping on the Rideau lakes the last week in July my attention was attracted by the appearance of the foliage on the basswood trees (*Tilia americana*). On several of these the leaves were nearly all dead, having been almost skeletonized by the adults of this beetle. They were still present and were so sluggish that I could have gathered thousands of them without a net.

POPLAR BORER (*Saperda calcarata*). In the same district the poplars (*Populus tremuloides*) were severely attacked by the larvæ of this very large Cerambycid. At that date some of the larvæ were apparently full grown, but had not yet pupated; others were only about half the size of these. The largest were right in the pith of the tree and had made large and long tunnels from where they had entered. Many larvæ were only half-grown.

BIRCH BUCCULATRIX (*Bucculatrix canadensisella*). On the college campus and in the neighbouring woods this tiny insect was very abundant on birch foliage.

Chermes similis. So far as I can see, almost all these insects have perished this year on the White Spruce trees at Guelph, although very abundant and destructive last year and fairly abundant this spring. I have no clue to the cause. *Chermes abietis* has not been attacked to the same extent if at all.

DR. HEWITT: I should be glad if Mr. Cæsar would tell us more about his work on the insects of this year.

MR. CÆSAR: I might say that, so far as the Codling Moth is concerned, I am more firmly convinced than ever that the recommendations we have been making for a very careful and even a drenching spray after most of the blossoms have fallen is the right way to treat this insect. Here are two illustrations of what can be done by such a spray. Mr. Jas. E. Johnson, of Norfolk County, has a large 40 acre orchard of trees about 40 years of age. Norfolk is one of the warmest counties in Ontario, and there is a lot of injury done there by the second brood of Codling Moth. Many unsprayed orchards will have as high as 80 per cent. of wormy apples. Mr. Johnson has set to work to free his orchard of the Codling Moth by a single thorough spraying immediately after the blossoms drop. He has two gasoline power outfits. So well has he succeeded that this fall he had, when I visited the orchard at packing time, considerably less than 1 per cent. of wormy apples; in fact, you could visit tree after tree without seeing a single wormy apple either on the tree or on the ground. He used lime-sulphur and arsenate of lead. Some of you will be surprised when I tell you that he applied as high as 10 gallons to a single tree that had had plenty of bloom.

DR. HEWITT: Does not a single, very thorough application appear to be giving quite as good results as several lighter ones, and be at the same time more economical?

MR. CÆSAR: I certainly think so, though until the Codling Moths, in warm districts, are brought thoroughly under control I recommend a second application about three weeks or a little more after the blossoms fall. This is merely to make thorough work of the first brood. It is about this time that the worms are really beginning to enter the apples in anything like large numbers.

MR. GIBSON: Why do you recommend fairly high pressure and so heavy spraying? Does the mixture not run off?

MR. CÆSAR: If you watch the spraying of large trees—and most of our trees are large—you will find that the outer leaves often intervene between the spray and the inner fruits and leaves. Now, I find it almost impossible to get at these more hidden parts without great care and considerable loss of spray. It is here that high pressure comes to the aid and forces the outer leaves aside, driving the spray right through the trees and placing it just where you want it. Again, if a tree has had a great abundance of bloom you will be surprised if you examine your work carefully to find out how very difficult it is to see that every calyx is thoroughly covered; in fact, I do not think you can cover them without what is equivalent to a drenching spray. I do not aim at driving the spray into the inner cavity. I like to do so if I can, but I know I often cannot. It is thoroughness I am after. You will find trees that are sprayed in this way will be much freer from Scab than those where you stop spraying as soon as the leaves begin to drip. As for burning we use the lime-sulphur weak, and, by spraying before the blossoms burst, we keep the leaves free from Scab or insect injuries, and such leaves seldom have any burning.

MR. GIBSON: What strength do you use?

MR. CÆSAR: 2 lbs. Arsenate of Lead to 40 gallons of diluted lime-sulphur. We dilute a lime-sulphur of the strength of 1.310 sp. gr. to the proportions of 1 gal. to 40, by which we mean that we add 39 gallons of water to 1 gal. of lime-sulphur.

This year Mr. Chas. Good and I sprayed two orchards that had not been sprayed for fifteen years. We wanted to test a new district. This was a very hard year to get the work done soon enough, as the blossoms dropped much more rapidly than we expected and the calyces closed in about five days. However, we got one orchard pretty well sprayed. For the Codling Moth we only gave the one application. The well sprayed orchard, so far as I could judge, had an average of 95 per cent. of clean fruit, even on trees where there were very few apples. The Spys in the other orchard were equally as clean, as the calyces on this variety closed last, but some of the earlier varieties had, as we expected, a considerable percentage of worms. I could not visit the orchard in time to see these earlier varieties, so I have to rely solely on what I was told. The orchard was situated near Rockwood, about nine miles from Guelph, so that the percentage of second brood would not be so large as in the Niagara District. One would not expect so high a percentage of clean fruit the first year in the warmer parts of the province. Mr. Johnson's splendid record is the result of three seasons' work and not of one.

PROF. SWAINE: Did you get any satisfaction from lead arsenate in controlling Plum Curculio?

MR. CÆSAR: I have not myself performed definite experiments on Plum Curculio. I could not speak for certain on it, but the claim is made by men in the United States that about 50 per cent. of the Plum Curculio can be controlled by the spraying with arsenate of lead when the fruit is just forming, and then again two weeks after.

PROF. SWAINE: Two or three of our Quebec apple growers sprayed very thoroughly, and it was said this year it was impossible to control it with arsenate of lead.

MR. CÆSAR: Personally, I rely more upon cultivation and the removal of all sorts of rubbish from the orchard and its surroundings than I do upon spraying,

though I believe the spraying helps. I have plenty of proof of the value of cultivation and removal of rubbish.

Prof. Swaine: Have you any evidence that the presence of plum trees about the edges of apple orchards will tend to draw away the Curculio?

Mr. Cæsar: There do seem to be instances where this is the case.

Prof. Swaine: I have seen some very interesting examples of this near Macdonald College.

NOTES ON THE SEASON OF 1911.

Rev. Thomas W. Fyles, D.C.L., Hull, Que.

Silvanus Surinamensis, Lin.

Jan. 13th. Specimens of the Saw-toothed Grain Beetle (*Silvanus surinamensis Lin.*) from Ontario were brought to me. These mischievous little creatures belong to the Cucujidæ. The species is said to have been brought to the Centennial Exhibition in straw goods from Italy. (See An. Rep. Ent. Soc. of Ont. for 1876, page 23). The species is now widely distributed. I found it at Levis in the granaries of the late Joshua Thompson, Esq.

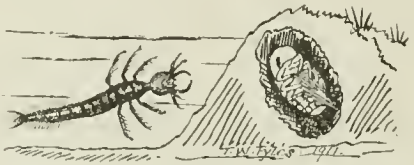


Fig. 23. Larva and pupa of water-beetle (*Dytiscus fasciventris*)—one-half natural size.

Dytiscus fasciventris, Say.

May 27th. I caught two larvæ of the Water Beetle (*Dytiscus fasciventris* Say). They were one inch long. When they attained their full growth they were an inch and five-eighths in length. They were sepia-coloured and had a pale dorsal line. The head was large and round and furnished with two formidable nippers 6 millimetres long, and with antennae 10 millimetres. They had a horseshoe-shaped suture on the top of the head. The second segment was small at the neck and enlarged at the base. The three last segments were fringed on either side. The tail was forked and fringed on the inner edges of the prongs. The legs were fringed. The larvæ crept into the earth and assumed the pupal stage on June 12th.

The pupa was an inch long. In colour it was ochreous. The eyes were almond-shaped, black. The legs were free. Two stumpy projections were at the end of the body. The beetles appeared on the 23rd of June.

The Rev. J. G. Wood, in "Insects at Home," Plate III., gives a representation of the full-grown larva of *Dytiscus marginalis*. The Rev. W. Houghton, in "Country Walks of a Naturalist," page 31, represents the same insect in all its stages. Both larva and pupa as represented differ somewhat from those of *D. fasciventris*.

A Parasite of Datana angusii G. & R.

Last year I found larvæ of *D. angusii* feeding upon hickory. I succeeded in bringing a number of them to perfection. The first of the moths appeared on May 31st last, and others followed; but each of two of the chrysalids produced a lively specimen of *Exochilum mundum* Say. The front of the chrysalis-case broke away to give the parasite exit.

Basilona imperialis, Drury.

May 31st. An imago of *B. imperialis* appeared in my breeding cage, from a larva obtained in September of last year. Specimens of this fine moth were taken in this locality up to July 11th.

Phlegethontius cingulata, Fab.

On the 18th of September, a neighbour's son brought me a living specimen of *P. cingulata,* that had been attracted by the electric light at the toll gate, on the Aylmer Road, at the corner of Front Street, Hull.

The specimen was so perfect, so beautifully fresh, that it was hard to believe that it had come from "away down South." And yet, to the best of my knowledge, the larva of the species has never been found in Canada. Indeed, I believe that no capture of the moth has hitherto been recorded in the Province of Quebec.

I am indebted to Mr. A. F. Winn for the following notices of captures of the species which he has found in our Canadian Entomological publications:

"Mr. McIntosh took it at St.John, N.B., Oct. 5, 1902. (See An. Rep. Ent. Soc. of Ont. 1902, page 93.)."

"Mr. Moffat recorded it 30 years ago, from Long Point, Ontario (See Can. Ent. XIII. 256)."

"It was captured at Orono, Maine. (See Can. Ent., XVI, 21) by Mrs. C. H. Fernald."

P. cingulata is considered a form or variety of the European *Sphinx convolvuli.* If my memory serves me aright, the European moth has more of a grey or bluish tinge than *P. cingulata.* There is, however, a close resemblance between the two.

In that handsome volume "British and European Butterflies and Moths" by A. W. Kappel and W. Egmont Kirby, on Plate XIII, there is a coloured representation of a larva of *S. convolvuli.* It shows a length of four inches. The dorsal parts of the larva are dark brown; the lower, tawny. The seven oblique side lines are of a darker brown bordered underneath with tawny. The spiracles are black in white rings. The horn is of a dark neutral tint. The larva is represented as feeding upon the small bindweed (*Convolvulus arvensis* L.). Another food plant is said to be *Impatiens noli-me-tangere* (See Stainton's Manual of Butterflies and Moths, page 90).

As food-plants of *P. cingulata* Dr. John B. Smith gives "Morning glory, sweet potato and other *Ipomœa* and *Convolvulus species.*" (Insects of New Jersey, page 387.)

Another Gelechian.

In the beginning of September, Miss Faith Fyles, B.A., Assistant Botanist for the Department of Agriculture, brought me from a swamp, 25 miles north of Hull, two galls on *Aster junceus* Ait. Each gall was on a stem and was about

6 inches from the ground and 8 inches from the top of the panicle of blossoms. It was fusiform—the length of it was one inch, and the diameter at the widest part half an inch.

The moths from the galls appeared on Sept. 12th and Sept. 15th respectively. There was not the slightest sign of a web in the galls.

Each chrysalis case was 10 millimetres long, and was of a clear chestnut brown with the four last segments somewhat darker. The wing cases extended to the end of the sixth abdominal segment. The outlines of the antennae and limbs could be plainly traced in the case.

Description of the Imago.

Expanse of wings 20 millimetres. Length of body 10 millimetres. *Head* brown mottled with grey. *Palpi* recurved (droop in drying) two millimetres long, toothed on the outer edge of the second segment. *Antennae* 6 millimetres in length, filiform, brown. *Thorax* and *abdomen* dark brown—the latter somewhat hoary towards the end. *Forewing* brown—taken through the length, the costal half of the wing is of a warmer brown than the inner half. The end third of the costal half is beautifully streaked with dark brown and rosy grey. *Fringe* of fore wing 3 millimetres deep, has a rosy glow towards the outer angle, and is richly marked with minute brown spots. *Hind wings* dark grey (which dries with a gloss). Fringe light brown, 3½ millimetres long towards the base of the wing. Legs: tibia of the hindmost pair set with long hairs—like circular brushes. Joints of tarsi edged wth grey.

I sent one of my specimens to Mr. W. D. Kearfoot that he might compare it with his moth *G. busckiella,* and he kindly wrote to me: "It is certainly not *busckiella.* In fact, it has no resemblance to it at all, as it is a species with well defined markings, while *busckiella* is rather evenly and finely peppered all over." . . . "I went through the other named species of Gelechidæ, and found nothing that yours can be identified with."

I do not think this moth has been previously described, and I therefore propose for it the name *Gnorimoschema septentrionella.*

REPORT OF THE COUNCIL.

The Council of the Entomological Society of Ontario begs to present its report for the year 1910-11.

The forty-seventh annual meeting of the Society was held at the Ontario Agricultural College, Guelph, on Thursday and Friday, November 3rd and 4th, 1910. There were fourteen members present from a distance as well as a large attendance of the faculty and students connected with the College.

During the first afternoon the reports of the Directors on the insects of the year were read and discussed; papers were read by Mr. L. Caesar on "Insects of the Year in Ontario"; by Dr. C. Gordon Hewitt, on "The More Injurious Insects in Canada in 1910"; by the Rev. Dr. Fyles on "Notes of the Season of 1910"; Mr. H. H. Lyman gave an account of the First International Congress of Entomology which was held at Brussels during the Summer. Reports were read from the Montreal Branch, the Toronto Branch, the Librarian, Curator and delegate to the Royal Society of Canada.

In the evening a large meeting was held in the Massey Hall auditorium, at which there was a good attendance of students and representatives of the College staff as well as of the members of the Society. The chair was taken by Mr. C. C. James, Deputy Minister of the Ontario Department of Agriculture. Prof. James G. Needham, of Cornell University, Ithaca, N.Y., gave an address, illustrated with many beautiful lantern views, on "The Role of Insects in Water Life."

The Society met both morning and afternoon of the following day, when a variety of papers were read and discussed. Officers for the ensuing year were elected, and the Treasurer presented his financial statement. Many specimens of great interest and rarity were exhibited by members. The following are the papers that were read: "Beetles found about Foliage," by Mr. F. J. A. Morris; "The Pool," by Rev. T. W. Fyles: "The Bean Maggot in Ontario in 1910," by Prof. J. E. Howitt: "The Horse-Radish Flea Beetle," by Mr. A. F. Winn: "The Migration of Some Native Locusts," by Mr. Norman Criddle: "The Practical Importance of the Study of Parasitic Insects," by Dr. C. Gordon Hewitt: "The Coccidæ of Canada," and "Aleyrodidae of Ontario," by Prof. T. D. Jarvis; "Some Insects of the Larch," and "Insect Notes from St. Anne's," by Prof. J. M. Swaine: "Basswood or Linden Insects," and "The Entomological Record for 1910," by Mr. Arthur Gibson.

The Canadian Entomologist, the monthly magazine of the Society, has been regularly issued at the beginning of each month. The forty-second volume was completed in December last; it consisted of 413 pages, and was illustrated with 8 full-page plates and a number of original drawings. The contributors numbered 67, and included writers in Ontario, Quebec, British Columbia, Manitoba, Alberta, England, many States of the Union, and the Hawaiian Islands.

Meetings of the Society were held during the winter months at the Ontario Agricultural College on alternate Wednesday afternoons. The attendance included several of the more advanced students and much interest was taken in the papers and discussions. The following subjects were taken up during the course of the meetings:

"Aphids," by Mr. A. C. Baker; "Equipment for a Collecting Tour in Europe," by Prof. T. D. Jarvis; "Position of the Mallophaga amongst Insects," by Mr. A. W. Baker; "Sources of our worst insect pests and methods of their distribution," by Mr. L. Caesar: "Woolly Aphids of Ontario," by Mr. Vernon King: "The Saw Flies of Ontario," by Mr. W. A. Ross.

The Council takes pleasure in reporting that the preliminary arrangements for the preparation of a new Catalogue of Canadian Insects have been successfully concluded. The initial steps towards this undertaking were taken at a meeting held on November 4, 1910, and a committee was appointed to take charge of the work of its preparation. The question of publication was taken up by Dr. Hewitt with the Geological Survey and Mr. Brock, with the result that they have consented to publish the list in parts as desired by the committee. Some of these parts are now in the course of preparation.

The members of the council have learned with pleasure of the improved state of health of their esteemed member, the Rev. George W. Taylor, and sincerely hope that he will so continue to improve as to be able again to take up entomological work in the order in which he has earned such a widespread reputation as a student of the Geometridæ.

It is with deep regret that the Council has to record the death of Dr. Samuel Hubbard Scudder, who died at his residence, in Cambridge, Mass., on the 17th of May, 1911, aged 74 years. Dr. Scudder was one of the most distinguished entomologists that America has ever produced, having been the greatest authority of his time on the Orthoptera and on Fossil Insects, and no less eminent as a student of the Diurnal Lepidoptera. He was also a man of the highest culture and refinement of mind, and his lovable, unselfish character attracted to him a great many friends among the leaders of science, art and literature. The high scientific reputation which he enjoyed is abundantly evident from his election to honorary membership in important societies in many European as well as American cities. He was one of the first honorary members of the Entomological Society of Ontario, and a frequent contributor to the pages of the Canadian Entomologist, as well as occasionally to our Annual Reports.

The Council also has to record with sorrow the loss of another distinguished entomologist, Daniel William Coquillett, who died at Atlantic City, on July 8. He was one of our most eminent authorities on the Diptera and in economic entomology held the distinction of having been the first to discover and demonstrate the value of hydrocyanic gas as an insecticide. He was a frequent contributor to the pages of our magazine, and his loss will be keenly felt by all students of Diptera in North America.

Respectfully submitted,

E. M. Walker,

President.

ANNUAL REPORT OF THE MONTREAL BRANCH.

The 320th regular and 38th annual meeting were held at the residence of Mr. Henry H. Lyman, 74 McTavish Street, on May 13th, ten members being in attendance.

The Secretary read the following report for the season:

Thirty-eighth Annual Report of the Council.

Nine regular meetings have been held during the season of 1910-11, the average attendance being eight. One council meeting was held in October to plan a programme for the year.

At the June meeting, we had the pleasure of meeting Miss Hutchinson, of Leominster, England, who gave an interesting account, and showed a brood of larvæ of a European Geometrid moth which have been inbred for 36 years; Prof. Lochhead, of Macdonald College, attended our February meeting and presented a paper on Adaptations between Plants and Insects; and Mr. Arthur Gibson, of Ottawa, was present at the March one, reading a paper on some of the Ceruras, or Puss Moths. We should be glad to have visiting entomologists at our little gatherings even more frequently.

The following list of papers shows in diversity of Branch subjects and in numbers one of the best programmes the Branch has had. It is a pleasure to note that two of these papers are on botanical subjects. Entomology and botany are so closely bound together that we hope for a continuation of references to plants.

President's Annual Address, Henry H. Lyman.
Galgulidae, or Toad-Shaped Bugs, Geo. A. Moore.
A Quest and What Came of It, Henry H. Lyman.
The Borers in the Cat-tail Stems, Albert F. Winn.
Eupithecia consignata, Miss Hutchinson.
A White Variety of the Pitcher Plant, L. Gibb.
Hemiptera Taken at St. Hilaire, May 20, Geo. A. Moore.
The Horse-radish Flea-beetle, A. F. Winn.
Flies at Sugar at Night, A. F. Winn.
On the Genus Grapholitha, Henry H. Lyman.
A Trip to Cobalt, G. A. Southee.
Note on Symmerista albifrons, A. F. Winn.
Hemaris gracilis, A. F. Winn.
Preparation of Noctuid Genitalia, G. Chagnon.
Notes on a few Lepidoptera from Newfoundland, A. F. Winn.
Collecting in the White Mountains, Henry H. Lyman.
Plume Moths of the Province of Quebec, A. F. Winn.
The Nabidæ, or Damsel Bugs, Geo. H. Moore.
Preliminary Notes on Genitalia of Leucania, G. Chagnon.
The Genus Calephelis, Henry H. Lyman.
Parallelia bistiaris, A. F. Winn.
Adaptations between Plants and Insects, Prof. W. Lochhead.
Notes on Life History of Estigmene Prima, A. F. Winn.
Notes on E. Prima, Henry H. Lyman.
The Small Spittle Insects, G. H. Moore.
Entomology and Evolution, Henry H. Lyman.
Notes on Cerura Multiscripta, Arthur Gibson.
Chrysophanus Thoe, L. Gibb.
Exchanges, A. F. Winn.
The Proposed Catalogue of Canadian Insects, Henry H. Lyman.

The plan adopted a few years ago of selecting certain genera for comparison of specimens and study has been continued. The genera Pheocyma, Phyciodes, Colias, Cerura, Calephelis and the family Pterophoridæ have been taken up, and in most cases a good representation of the various species was made from the members' cabinets. Mr. J. W. Cockle of Kaslo, B.C., very kindly sent us his collection of Colias to aid, or perplex us, in this difficult genus.

The donation by Mr. Dwight Brainerd of a number of entomological magazines and pamphlets has added considerably to our library. The set of the Canadian Entomologist is now complete and bound in uniform style. Several other periodicals await binding, and our librarian will soon be asking for another section for the book case.

A field day was held on May 24th at Hudson, Que., but the weather was cool and the grass, etc., wet, so that comparatively little was taken.

The report of the Treasurer shows a balance on hand of $69.83.

Respectfully submitted, on behalf of the Council.

ALBERT F. WINN, *Sec.-Treas.*

Mr. Lyman then delivered his annual address as President, reviewing the work of the Branch during the past two years.

The election of officers was proceeded with, resulting as follows: President, G. A. Southee; Vice-Pres., G. Chagnon; Sec.-Treas. A. F. Winn, Librarian, L. Gibb; Council, H. H. Lyman, G. A. Moore, E. C. Barwick.

Mr. Lyman exhibited a number of boxes of tropical butterflies, particularly from India and Africa, among which were many strikingly beautiful and curious pieces.

ANNUAL REPORT OF THE TORONTO BRANCH.

The 160th regular and 15th annual meeting of the Toronto Branch was held in the Biological Building on Thursday, Oct. 19, 1911, the president, Dr. Walker, in the chair.

The minutes of the previous meeting were read and approved. The annual report of the Secretary-Treasurer was read and approved also. In the course of the year eight meetings were held. The average attendance was seven. Two new members were added to the membership. The collections of insects belonging to the Branch have been transferred to and are now a part of the University Biological Museum.

The following papers were read:

Oct. 20.—Dr. Walker, "The Egg-laying habits of the Odonata."
Nov. 10.—Paul Hahn, "Fight against Tussock Moth in Toronto."
Dec. 8.—A. Cosens, "Some Curious Habits of Lepidoptera."
Jan. 12.—J. B. Williams, "The Insect House in Zoological Gardens, Regent's Park."
Feb. 16.—C. W. Nash, "Wild Life in Town Gardens."
Mar. 9.—Dr. A. R. Abbott, "Protective Resemblance in Insects."
Dr. Walker, "Mating Habits of Odonata."
April 20.—Dr. Walker, "Some Injurious Forest Insects at De Grassi Point in 1910."
Dr. Walker, "The Proposed Catalogue of Canadian Insects."
May 11.—J. B. Williams, "Mimicry in Insects."

The officers elected for the year 1911-12 were as follows:

President, Dr. Walker; Vice-Pres., Mr. A. Cosens; Sec.-Treas., Arthur Smith; Librarian, J. B. Williams; Council, Dr. Abbott and Messrs. Hahn, Craigie and Morris.

Respectfully submitted,

ARTHUR SMITH, *Secretary.*

CURATOR'S REPORT.

During the year the Society's collections have been increased by the gift of eighty-two good mounted specimens of Orthoptera by our President, Dr. Walker. This order was poorly represented so that Dr. Walker's kindness will be much appreciated by the members.

As we have very few Diptera and are still in need of many Hemiptera, any member of the Society who can spare named specimens of either of these orders would be conferring a favour on the Society and help to fill a long felt want.

During the year several members of the Society have visited Guelph solely to examine the collections as an aid in investigations they were making. The Entomological staff and Senior Biological students of the College also frequently refer to them for identification purposes.

The cases have all been examined from time to time during the year and precautions taken to prevent injury from museum pests or other causes.

Respectfully submitted,

L. CAESAR, *Curator.*

THE REPORT OF THE LIBRARIAN.

During the year ending October 31st, 1911, eight-eight bound volumes have been added to the Library, making the total number on the register 2106. This is a much larger number of additions than in any previous year for a long time. The Treasurer had more funds available for the purposes of the Library this year than usual and we were, therefore, enabled to purchase some valuable and expensive works, as well as to bind a considerable number of periodicals.

During the year a card catalogue as regards authors has been made of the bound volumes and will be found useful to those who wish to consult the library. It will be necessary, however, to make a similar card index to subjects to make the means of reference complete.

A further improvement has been made by sorting out and arranging a large number of bulletins and periodicals in pamphlet cases; 150 were procured and now the publications of experimental stations have been arranged according to states and countries. This will facilitate reference very much.

Among the additions made may be mentioned the following works:

Sir George Hampson's "Catalogue of the Lepidoptera Phalaenae in the British Museum," Vol. IX.
Kirkaldy's "Catalogue of Hemiptera—Heteroptera," Vol. I.
Blatchley's "Coleoptera of Indiana."
Gray's "Nomenclature of Coleoptera in the British Museum."
Gray's "Catalogue of Longicorn Coleoptera in the British Museum."
Douglas & Scott's "British Hemiptera—Heteroptera."
Kirby's "Synonymic Catalogue of Orthoptera."
Theobald's "Monograph of the Culicidae of the World."
Cameron's "Monograph of British Phytophagous Hymenoptera," 4 vols.
Buckton's "Monograph of British Aphides," 4 vols.
Sir John Lubbock's "Monograph of the Collembola and Thysanura."
Michael's "British Oribatidae and British Tyroglyphidae."
Also a Series of the Proceedings of the Entomological Society of Washington, 12 vols.

The library is constantly made use of by the senior students and members of the staff of the Ontario Agricultural College, and is of the utmost assistance to them in their entomological work.

Respectfully submitted,

CHARLES J. S. BETHUNE, *Librarian.*

REPORT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO TO THE ROYAL SOCIETY OF CANADA.

PROF. J. M. SWAINE, MACDONALD COLLEGE, QUE.

As a delegate from the Entomological Society of Ontario, I have the honour of presenting this report.

In general the Society has had a very successful year. There appears to be a decrease in the membership of one or two of the Branch Societies, but it is hoped that young members may be obtained to carry on the work so well done by the older men, now gradually dropping out.

The field offered by our immense territory for scientific research in Entomology, and for practical application of knowledge so acquired is almost unlimited. The great number of our insects, the ease with which they may be everywhere collected, their rare beauty of form and colouring, their complicated structures, interesting modifications, and remarkable metamorphoses which have thrown so many sidelights on problems in evolution make the study of entomology as fascinating as any upon which the young zoologist can enter. The great destruction wrought by so many of our insect pests renders the studies of the Economic Entomologist absolutely necessary. Along both these lines the Society is doing active work.

I am glad to report that the library and collections of the Society are gradually increasing in value.

The forty-seventh annual meeting was held at Guelph on November 3rd and 4th, with a good attendance of the active members. An account of the papers read, and of the discussions, will be found in the Annual Report of the Society. to appear in a few days. The following items from the programme of the meeting will indicate the nature of the work presented.

"The spread of Diseases among Plants, Animals and Man, by Acarids," by Professor Jarvis; "Leaf-eating Beetles," by F. J. A. Morris; "Collecting in the White Mountains," by H. H. Lyman; "The Bean Maggot in Ontario in 1910," by J. E. Howitt; "Notes on some Insects of 1910," and a paper on "The Pool," by Dr. T. W. Fyles; "The Horse-radish Flea-beetle," by A. F. Winn; "Further Notes on Basswood Insects," and "The Entomological Record for 1910," by A. Gibson; "Some Observations on the Practical Importance of Parasitic Insects": "Parthenogenesis among Bees," by Dr. Hewitt; "Notes on the Breeding of Tropidopria conica," by G. E. Sanders, of Ottawa; "Scolytid Beetles attacking the Larch," by J. M. Swaine; "The Migration of some Native Locusts in Manitoba," by N. Criddle.

The annual lecture was given by Professor Needham of Cornell University. He discussed "The Role of Insects in Water Life." In an eloquent and instructive address, illustrated by lantern slides, Professor Needham explained to the Society the work in an entirely new field of economic research now being carried on at Cornell under his direction. The dry lands of the west are being reclaimed by irrigation. Before their canals are finished, Professor Needham's work will have shown the way to the utilization of great tracts of marsh and swamp, now utterly useless.

The Society's publication, the Canadian Entomologist, has appeared regularly, and continues to be one of the most valuable of Entomologic journals. Dr. E. M. Walker, the present editor, is maintaining the high standard set by his predecessor, Professor Bethune. The forty-second volume, which closed in December, 1910, contained over 400 pages, eight full-page plates, besides text figures, and nearly 100 articles.

THE BRITISH COLUMBIA ENTOMOLOGICAL SOCIETY.

I take pleasure in recording this year's proceedings of the British Columbia Entomological Society. The meeting was held in the Aberdeen School, Vancouver, on December 9th, 1911. Mr. Wilson acted as chairman and an interesting programme was rendered. The following were the papers presented:

Report from the Okanagan District, E. P. Venables.
Report from the Kootenay District, G. W. Cockle.
Report from the Vancouver District, A. H. Bush.
Insects of the Year in B. C., T. Cunningham.
Life History of the Narcissus Fly, P. Norman and E. A. Wallace.
Extract from Annual Report of Dr. C. Gordon Hewitt, Dominion Entomologist, Relative to the Narcissus Fly.
Insects Imported into B.C. on Nursery Stock, W. H. Lyne.
Bombycia improvisa Edw. and its Congeners, G. O. Day.
Climatic Influences at Work in the Province Affecting Plant and Insect Life, T. Wilson.

The evening closed with an excellent illustrated lecture by Dr. S. Hadwen, Dominion Veterinarian, "Agassiz on the Life History of the Ixodoidea."

Some of the more important features brought out at the meeting were as follows:

The Diamond Backed Moth is rapidly becoming a serious enemy to cabbage-growing in the Okanagan District. This year it was parasitized by a species of Ichneumon.

In the Kootenay District the Black Cherry Aphis was very prevalent, but in reality proved a blessing in disguise in that the excessive growth which is usually necessary to remove by pruning had been checked without injuring the condition of the trees.

Root maggots caused considerable loss to the market gardener in the Kootenay, as they did on the lower mainland.

Mr. Cockle reported a remarkable outbreak of cutworms in June and early July. Many species were in evidence, the most common being *Mamestra canadensis.*

Mr. Cunningham contended that the Oyster Shell Bark Louse—*Lepidosaphes ulmi*—was the worst pest the orchardist has to fight. He advocated the general destruction of wild crab apple trees as a means of effectually combating this insect. The fruit growers of British Columbia are particularly blessed by an absence of any very serious orchard insect, the Oyster Shell Scale being by far the worst.

The Narcissus Fly is a very serious pest to commercial bulb growing on Vancouver Island. Its presence is not so much noted on the mainland. This is another insect imported from Europe and it was contended that the life history in British Columbia, in several vital ways, differs markedly from its habits in Holland The "recurvus" and "barii conspicuus" types of narcissi are most subject to attack.

The following insects have been recorded as being imported into British Columbia on nursery stock:

Aspidiotus perniciosus.
Aspidiotus ostreaformis.
Aspidiotus ancylus.
Aspidiotus forbesi.
Aspidiotus rapax.
Aspidiotus aurantii.
Aspidiotus citricola.
Aulacaspis roseæ.
Chionaspis furfura.
Lepidosaphes ulmi.
Mytilaspis citricola.
Saissetia oleæ.
Lecanium armeniacum.
Icerya purchasi.
Pulvinaria innumerabilis.
Pseudococcus citri.
Pseudococcus longispinus.
Schizoneura lanigera.
Aphis persicæ niger.
Aphis mali (eggs).
Hyalopterus pruni (eggs).
Mysus cerasi (eggs).
Ceresa bubalus (eggs).
Notolophus antiqua (eggs).
Alsophila pometaria (eggs).
Sanninoidea exitiosa.
Anarsia lineatella.
Thyridopteryx ephemeræformis.
Euproctis chrysorrhœa.
Porthetria dispar (1 egg cluster).
Sitotroga cerealella.
Chrysobothris femorata.
Saperda candida.
Agrilus sinuatus.
Agrilus ruficollis.
Schistoceras hamatus.
Prionus laticollis.
Tenebrio molitor.
Calandra sp.
Scolytus rugulosus.
Xylocrius agassizii.
Bembecia marginata.
Diastrophus nebulosus.
Bryobia pratensis (eggs).
Eriophyes pyri.

Mr. Day extended the conviction that *Bombycia improvisa* and *B. fasciata,* at first thought to be varieties of one moth, are two distinct species.

Mr. Wilson presented an interesting paper on the Distribution of Plant and Insect Life. His paper, together with that of Dr. Hadwen, will appear in the publication on the proceedings now in process of being printed. Copies of the proceedings can be had on application to the Secretary (25c.)

The following officers were elected:

Hon. President, G. W. Taylor; President, T. Wilson; Vice-President, E. O. Day; Secretary, R. C. Treherne, 1105 Broadway W., Vancouver, B.C.; Advisory Board, Messrs. Wilson, Day, Treherne, W. H. Lyne, R. S. Sherman, J. R. Anderson.

Respectfully submitted,

R. C. TREHERNE, *Secretary.*

EVENING SESSION—THURSDAY, NOV. 23rd, 1910.

A public meeting was held at 8 o'clock, p.m., in the Massey Hall Auditorium, which considering the inclemency of the weather was fairly well attended by members of the Society, students of the College, and Macdonald Institute, and visitors from the town. The chair was occupied by President Creelman, who opened the meeting with a short address of welcome in his usual cordial manner. Dr. WILLIAM RILEY, who was to have been the speaker of the evening was unfortunately prevented by illness from being present, but his place was ably filled by Dr. Hewitt, whose interesting address on "Insect Scourges of Mankind" was illustrated by many excellent lantern slides.

INSECT SCOURGES OF MANKIND.

[An Abstract from the popular lecture by C. GORDON HEWITT, D.Sc., Dominion Entomologist, Ottawa.]

Most of us are accustomed to consider insects in their relation to man, as affecting his crops, forests and other natural products. The last few years, however, have witnessed a most remarkable development in the study of insects as affecting man himself. Few people realize that it was not the hostility of native tribes nor the impassable nature of tropical forests that prevented the opening up of Africa to the white man, but the presence of a few species of insects, which we now know to be the carriers of the causative organisms of certain diseases fatal to the white intruder. The presence of the disease-bearing mosquito played a more important part in preventing the construction of the Panama Canal by the French than the lack of financial support. It is safe to say that the discovery of the important relationship of insects to man has been more responsible in compelling people, especially statesmen, to entertain a true conception of the importance and value of entomological knowledge than any other aspect of economic entomology. When we see in a country such as India over a million people dying annually from Malaria, and in a portion of Uganda over one hundred thousand natives killed in three years by the Sleeping Sickness, even indifferent

men are compelled to agree that entomological knowledge plays a serious part in the welfare of mankind. The ultimate destiny of man, I take it, is the overcoming of the antagonistic forces of nature and of these forces, as we all know, insects constitute an important section. In spreading over the world, the white man has proceeded in a blundering fashion, obsessed by the idea of his own ability to overcome all obstacles, and he has been compelled to pay a heavy price for his pride. Finally, he is forced to tread the thorny path of knowledge, and to learn only by diligent inquiry the means whereby he can rectify the errors of the past and prevent their recurrence in the future. Time will not permit more than a brief account of two diseases which have had a most profound influence on mankind. These are the Sleeping Sickness and Malaria.

Before describing the nature and cause of the Sleeping Sickness, it is necessary to discuss another disease, the discovery of the cause of which led up to the discovery of the causative organism of the Sleeping Sickness.

African travellers for years have been well acquainted with a certain fly known as Tse-tse Fly, which occurs in certain parts of Africa in districts known as "Fly Belts." The presence of this fly rendered impossible the use of horses as beasts of burden, and its bite was also known to be fatal to cattle and dogs. It was not until 1895 that Col. Bruce, by means of series of patient investigations, discovered that the deadly nature of this fly was due to the fact that it was the carrier of a microscopic parasitic organism to which the name of "Trypanosome" was given. He showed that "Nagana," as this disease of cattle is called, was due to the inoculation of the animal by the fly with a species of Trypanosome.

Although domestic animals are highly susceptible to the disease, he found that the native big game such as buffaloes, antelopes, etc., normally carried these parasitic organisms in their blood without experiencing any ill effects as they, by long selection, had become immune and they served as reservoirs from which flies obtained the organisms. In 1901, the dread disease of Sleeping Sickness was first noticed in Uganda, and the severity of the disease is indicated by the fact that in a single island, Buvuma, the population was reduced from twenty-two thousand to eight thousand in a very short time, and in Busoga the deaths in one year from the disease numbered twenty thousand. A disease of this character was bound to attract the attention of the responsible governments, and investigations were immediately initiated. Col. Bruce was sent to Uganda, and he found in the cerebro-spinal fluid of natives suffering from the disease a species of Trypanosome. His previous work on Nagana led him to the belief of a possible relationship of a biting fly to the disease, and he immediately had collections of biting flies made throughout the entire region north of Lake Victoria Nyanza. He also mapped out the localities in which the disease occurred. As a result he found that the incidence of the disease corresponded with the distribution of a certain species of Tse-tse Fly (*Glossina palpalis*). The species which was the carrier of the causative organism of the cattle disease, Nagana, was *Glossina morsitans,* and these Tse-tse Flies of the genus *Glossina* are nearly related to our own Stable Fly, *Stomoxys calcitrans.* Col. Bruce was able to show by a series of experiments that the Tse-tse Fly was able to transmit the disease to healthy monkeys. The Trypanosome was found in the blood of natives, but did not appear to do much harm until it reached the cerebro-spinal canal, where it gave rise to the disease, Sleeping Sickness. The initial stages of the disease were accompanied by a strong disinclination to work on the part of the natives. The lymphatic glands became swollen, and in the end the patient sank into a state

of deep lethargy and absolute helplessness and died. Since Col. Bruce made his discovery a continuous series of investigations have been carried on in Uganda, with a view to discovering the habits of the fly and the nature of the disease. The chief preventive measure which so far has been adopted is the removal of the natives from the shore of the Lake and the islands, and the clearing of the bush around the shore of the lake. It was found that these were the localities most frequented by the fly.

The other disease, Malaria, is far more widely spread than Sleeping Sickness, and is responsible for a far greater mortality. There is no doubt that of all diseases it is the most serious, and has had the greatest effect on the distribution of the white man. The disease and its symptoms have been known for over two thousand years, but it was not until 1895, through the researches of Ross, that it was discovered how the disease was carried. In 1880, a French army surgeon, Laveran, when examining the blood of a soldier suffering from Malaria in Algiers, discovered the microscopic organism inside the red blood corpuscles which proved to be the causative organism of this disease. This small organism belongs to some of the lowest types of animal life known as *Hæmamœba,* but notwithstanding its low organization it was found to have a marvellous life-history. It was not until fifteen years after its discovery that the rest of its life-history and the means by which it was carried from man to man was discovered by Ross in India, and by others subsequent to his discovery. The idea that the mosquito might take a part in the transmission of the disease, however, was not unknown, and had been previously suggested by King in the United States and Manson in England. Briefly stated, the life-history of the parasitic organism is as follows: When the malaria mosquito, which has previously sucked the blood of a malarial person, punctures the skin of a new person, it injects a number of microscopic needle-like organisms or spores which penetrate the red blood corpuscles, and there lose their needle-like shape and change into *Amœbulæ*. These organisms feed on the interior of the red corpuscles and destroy the same. In doing so they increase in size until they almost fill the cell or corpuscle, and then break up into a large number of spores which are cast into the blood to reinfect other red corpuscles. When they are cast out, a certain amount of pigmented matter known as melanin is cast into the blood and gives malarial patients their characteristic colour. This breaking up of the malarial organism to form spores induces the fever, as all the spores of one lot of *Amœbulæ* are cast into the blood fluid at the same time. In the different types of fever this breaking up into spores or sporulation takes place at different periods. In Tertian fever it occurs every forty-eight hours, and consequently the feverish attack manifests itself every second day. In Quartan fever the feverish attack takes place every third day. If some of the blood of a person suffering from Malaria is taken up by a mosquito the malarial organism now passes through a complicated series of changes. Instead of breaking up into spores in the normal way the *Amœbulæ* assume a dimorphic character, one kind containing a single nuclear body and corresponding to the female cell and the other containing several nuclear bodies and corresponding to the male cells. On the surface of the male cells long filaments are formed into which the nuclei pass. These filaments, corresponding to spermatozoa, break off and unite with the female cells to form a single cell known as the Zygote. This process takes place inside the stomach of the mosquito, but now the Zygote becomes motile and bores its way through the wall of the mosquito's stomach on the outside of which it forms a cyst. This cyst gradually increases in size, and the growth in size is due to the remarkable changes taking

place inside, where the nucleus of the Zygote divides and a number of smaller bodies are formed. From these, still smaller bodies are formed which become needle-shaped in character, until at length the whole cyst is filled with a mass of needle-shaped bodies which are spores. The cyst then bursts and these spores are liberated into the body cavity of the mosquito, which, of course, is a blood cavity. The minute needle-shaped spores are carried on to the salivary glands and bore into the salivary ducts, with the result that, when the mosquito bites another person, large numbers of the small spores of the malarial organism are pumped, together with the salivary fluid, into the puncture, and thus enter the blood system of another person, who, in consequence, may develop the fever. The natives in malarial countries are usually immune to the effects of the malarial organism, and may be compared to the big game which are carriers of the organism of Nagana. It has been found that babies and infants act very largely as carriers of the organism, and the percentage of children infected decreases as they grow older, until after twelve years of age they may be rarely infected. Such infected children, of course, will serve as reservoirs of the disease.

With the discovery that the mosquito was the carrier of the causative organism of the disease, the question of the prevention and eradication of malaria resolved itself into the problem of the eradication of the mosquito, and this, in turn, practically implied the destruction of the breeding-places of the mosquito. The mosquito, as is well-known, has an aquatic larval stage. The larvæ living in the water on microscopic organisms are compelled to come to the surface to breathe. By covering the surface of the water with a thin film of oil, such as kerosene, the breathing of the mosquito larvæ is prevented, and consequently they are killed. The chief means, therefore, which are generally adopted for destroying the mosquito are the draining of marshes and other places where water collects and serves as breeding places, and also the treatment of permanent standing water with kerosene or crude oil. In addition, human habitations are screened to prevent the entrance of the mature mosquitoes. Standing water around houses, however small it may be in quantity, has to be treated, as the mosquitoes breed in most unlikely places. The success which has followed the adoption of anti-mosquito measures is remarkable.

In Havana, which at one time was a "white man's grave," Yellow Fever, which is carried by a species of *Stegomyia*, has been eradicated since the United States authorities commenced in 1898 a campaign against the mosquito. The United States Government is now able to construct the Panama Canal, owing to the mosquito control measures which they have adopted, and the same tale of the reduction in the number of cases of Malaria is told wherever preventive measures have been adopted.

To my mind, these facts indicate, among other things, how important a bearing a very small entomological fact may have on the welfare of man. How little did he, who first discovered the way in which the mosquito larva breathes, think that millions of lives would be saved through taking advantage of the phenomenon he observed, and this fact illustrates how great significance may be attached to an entomological observation, though it may have appeared small when it was made. The investigations on Sleeping Sickness and Malaria have demonstrated most strongly the necessity of complete studies with regard to the life-histories and bionomics of insects, and have given a foremost place to entomological investigation among those sciences upon which we shall have to depend for our future welfare.

In conclusion, I would commend the following passage written by that foremost English scientist, Sir Ray Lankester:

"The defiant, desperate battle which civilized man wages with nature must go on. But man's suffering and loss in the struggle—the delay of his ultimate triumph—depends solely on how much or how little the great civilized communities of the world seek for increased knowledge of nature as the basis of their practical administration and government."

At the close of the lecture, which was listened to with great interest and attention by those present, the Chairman (President Creelman) expressed the thanks of the audience to Dr. Hewitt for his instructive address in a warm and hearty manner, which was emphasized by the applause that followed. He spoke of the respect he felt for the type of man who is content to spend his life quietly and patiently carrying on scientific investigations, such as those described by Dr. Hewitt, and, though unobserved and unappreciated by the general public, yet doing a work of inestimable value to humanity.

SECOND DAY'S SESSION—FRIDAY, NOVEMBER 24th, 1911.

At about 9.30 a.m. the members of the Society met in the Museum of the Biological Department and spent a pleasant hour in the examiuation of the many interesting specimens which they had brought for exhibition.

Mr. Gibson, in illustration of his paper on Blister Beetles, exhibited a case containing representatives of the different species which occur in Canada. These are described in his paper in this report. He also showed some interesting lepidoptera, viz., *Gonodontis warneri*, Harv., from Humboldt, Sask., *Hydriomena ruberata*, from Saskatoon, Sask., and *Sciagraphia atrofasciata*, *Sciagraphia continuata* and *Macaria labradoriata* from Ottawa.

Mr. Swaine exhibited a collection of Ipidæ, including the adults and work of our more interesting species from Eastern Canada. Among the species represented were *Chramesus icoriæ*, Lec.; *Crypturgus atomus*, Lec.; *Dendroctonus simplex, Lec.; D. valens. Lec.; D. piceaperda*, Hopk.; *Dryocœtes affaber*, Mannh.; *D. autographus*, Ratz.; *D. eichhoffi*, Hopk.; *Dryocœtes*, n. sp., from larch; *Eccoptogaster piceæ*, Swaine; *Gnathotrichus materiarius*, Fitch; *Hylastinus obscurus*, March; *Hylesinus aculeatus*, Say; *Hylesinus*, n. sp., from basswood: *Hylurgops pinifex*, Fitch; *Ips balsameus*, Lec.; *I. cælatus*, Eich.; *I. calligraphus*, Ger.; *I. grandicollis*, Eich.; *I. pini*, Say; *I. borealis*, Swaine; *Phlœsinus dentatus*, Say; *Phlœotribus liminaris*, Harris; *P. piceæ*, Swaine; *Pityogenes*, n. sp., from pine: *Pityophthorus capiniceps*, Lec.; *P. consimilis*, Lec.; *P. lautus*, Eich.; *P. opaculus*, Lec.; *P. minutissimus*, Zimm.; *Polygraphus rufipennis*, Kirby; *Pterocyclon fasciatus*, Say; *P. mali*, Fitch; *Hylastus salebrosus*. Eich.; *Trypodendron betulæ*, Swaine; *T. politus*, Say; *T. retusus*, Lec.; *Xyleborus dispar*, Fabr.; *Xyleborus seratus*, Swaine.

Mr. Winn exhibited a number of interesting Lepidoptera, as follows:—

Incisalia eryphon, from Hymers, Ontario; *Falcaria bilincata*, from Dawson City, Y.T.; *Xylina amanda, hemiria, thaxteri* and *baileyi*, from Hymers, Ont.; *Autographa rectangulum*, from East Bolton, Que.; *A. surena*, from St. George's, Newfoundland; a series of 25 specimens of *Cenopis pettitana*, showing range of variation of fore wings from immaculate white, through yellow, spotted and banded, to reddish brown; a male *Colias philodice*, with the right hind wing only about one quarter the size of its mate, but not creased or crumpled in any way; and

another male of this species, taken on August 25th, at St. Hilaire, Que., expanding only 1⅛ inches.

Mr. Cæsar exhibited the following: Six species of borers from recently fallen white spruce; some parasites and predaceous foes of the same; a species of *Chalepus,* apparently *C. rubra,* found attacking the foliage of the bass wood; *Perillus bioculatus,* var. *claudus,* taken at Guelph; the Black Vine Weevil (*Otiorhynchus sulcatus*), taken at Guelph, on Strawberry; the Apple Curculio (*Anthonomus quadrigibbus*), taken on haws at Grimsby; an undetermined Buprestid from galls on the American Aspen (*Populus tremuloides*); *Cryptorhynchus lapathi,* taken at Guelph; specimens of the Palmer Worm (*Ypsolophus pomotellus*) reared at Guelph; the Gartered Plume Moth of the Grape (*Oxyptilus periscelidactylus*) taken at Stoney Creek; and some tineids reared from the Cat-tail Flag (*Typha latifolia*).

Mr. Evans exhibited 102 specimens of Lepidoptera, about 70 of which were micros, the remainder about equally divided between the Noctuidæ and the Geometridae. Of the specimens belonging to the latter two families, the names of those that are of special interest are included in the Entomological Record. Mr. Evans also showed a specimen of the curious "Stem-eyed Fly," or "Hammer-headed Fly" (*Sphyracephala brevicornis,* Say).

Dr. Walker exhibited a number of specimens of wood-boring larvæ and their work, in illustration of his paper on "Some Forest Insects from De Grassi Point, Lake Simcoe."

At about 10.30 o'clock the members withdrew to the Biological Lecture Hall, where, after the reading of the Presidential Address, the election of officers for 1911-1912 took place. A list of these has been given on page 6. The remainder of the forenoon and the afternoon were devoted to the reading of the papers which appear in the following pages.

ANNUAL ADDRESS OF THE PRESIDENT.

Edmund M. Walker, University of Toronto.

I have the honour of welcoming you to-day to the forty-eighth annual meeting of the Entomological Society of Ontario. Forty-eight years is a very respectable age for a learned society in a young country such as ours, and when we look back upon its vigorous history and steady growth, it is no wonder if feelings of pride arise within us. Let those of us of the younger generation, however, not permit such feelings of pride in the achievement of our society become feelings of self-satisfaction; let us always remember that the success which is the portion of our Society to-day, and the status that it occupies in the entomological world are mainly due to the struggles and patient toil of our pioneers, Dr. Bethune and Dr. Saunders, and to such of their fellow-workers as Dr. Fyles and Mr. Lyman, and to the tireless energies of our late lamented friend, Dr. Fletcher. With the wealth of facilities for the study of our science which we are privileged to enjoy at the present time, we are too apt to forget the difficulties and discouragements that were the lot of the earlier entomologists in Canada.

It is, however, not so much the past history of our Society, nor the progress of Canadian Entomology that I wish to consider to-day as the possibilities of the future development of our science in Canada. In other words what is the nature and scope of the field for entomological work in Canada at the present time?

In dealing with such a broad question as this we have to bear in mind not only the work that has been and is being done by entomologists in Canada, but also that of our neighbours to the south, whose assistance has always been most freely and generously given, and to whom a very large part of our success is due.

In the United States entomology has gained greatly in prestige of late years, and is now an important subject in the curricula of many of the Universities as well as the Agricultural Colleges. There are now in the United States, together with Hawaii and Porto Rico, no fewer than sixty-one Agricultural Colleges and experiment stations, at forty-seven of which investigations in applied entomology are being carried on. In Washington, the appropriations made for the current fiscal year for all the different phases of work of the Bureau of Entomology, amounted to $601,920.00; the scientific employees of the Bureau number 185 and besides these there are nearly 400 non-scientific employees, particularly in connection with the Gipsy-moth work.

Of course we cannot expect to see anything comparable to this in Canada for many years to come, but there is no doubt that, with the present rapid growth of population in our West, and the ever-increasing area of cultivated land, correspondingly greater facilities will be needed for the teaching and dissemination of the most advanced methods in agriculture and horticulture, and hence in the control of the insect pests of the farm, the orchard and the garden.

When our land is more fully occupied and farming methods have become more intensive, more attention will doubtless be given by the average farmer to such problems as the control of insect pests, but it is the duty of the economic entomologist to do all in his power to spread abroad his knowledge of such subjects before it is demanded of him. Excellent work, as we all know, has already been accomplished along these lines by the staff of the Division of Entomology at Ottawa, the Ontario Agricultural College, through our own Annual Reports and the various agricultural and horticultural journals, as well as through the Nature Study movement in our schools; but we need more well-trained workers and there is a great field for useful work in this branch of entomology for all who are willing and able to give their time and energies to it. It is, in fact, this branch of entomology that is most closely identified with our every-day lives and will appeal to the largest section of the public, and it is therefore the one that will always be, in a sense, the leading branch in an agricultural country like Canada.

But there is another branch of economic entomology, that has as yet received comparatively little attention in Canada, but which is scarcely of less importance than the preceding. I refer to forest entomology.

We have only recently become fully alive to the fact that our forests are not inexhaustible, and we are now hearing from authoritative sources that our forest wealth has been grossly exaggerated. We hear a great deal about the reckless waste of our timber resources through improvident methods of lumbering that utterly disregard the needs of future generations, and we are tired of hearing of the disastrous fires which follow in the wake of the lumberman's axe, and frequently destroy as many as twenty trees for every one that is felled by the lumberman.

Few realize, however, the important part played by insects in the destruction of our forests, and the close relationship that exists between forest fires and injurious outbreaks of insects. Dr. Hopkins, of the United States Bureau of Forestry, our leading authority on Forest Entomology, has shown that not only do many species of wood-boring beetles appear in large numbers after forest

fires, killing many trees that would otherwise recover, and rendering others unmarketable by their excavations and hastening decay by permitting the entrance of wood-destroying fungi; but that fires are often secondary to outbreaks of insects, which leave the dying or dead trees in a favourable condition for the spread of fire. Many square miles of burned-over areas in the Rocky Mountains were primarily the result of the attacks of wood-boring beetles.

In his admirable bulletin on the genus *Dendroctonus,* which includes the most injurious enemies of our coniferous forests, Dr. Hopkins has also shown that while many species at times attack living trees when present in unusually large numbers, certain forms, notably the Black Hills Beetle (*Dendroctonus ponderosæ,* Hopk.), actually prefer healthy to weakly trees and may be the cause of the destruction of the best timber over many square miles of territory. He has further demonstrated that outbreaks of this kind may be prevented or brought under control if prompt measures of the proper kind be taken. The methods employed, however, vary according to the particular species involved, so that it is necessary to have a precise knowledge of the species in question, and of its habits and life-history. It is information of this kind that is lacking respecting most of our forest insects in Canada. We want accurate knowledge of the characteristics of each species, in order that nearly allied species, of perhaps very different habits and economic importance, may not be confused; we want to know their complete life-histories, their seasonal and geographical distribution, the number of broods, their enemies, the species of trees they attack and the effects they produce thereon; in fact all we can learn about them. Only in this way can the best methods for their control be determined.

Surely there is a splendid field here for the young entomologist, who is anxious to take up a useful as well as attractive subject as his specialty. The study is not an easy one. Nearly allied species in some of the groups such as the bark-beetles (*Scolytidæ*) are often exceedingly difficult to separate; life histories are often difficult to follow out and material sometimes hard to obtain; nevertheless, the patient, accurate worker in this field will certainly be rewarded with results that are well worth the labour spent upon them and may, perhaps, be of much benefit to the community.

Fortunately, we are not entirely without workers in this field in Canada. Prof. Swaine, of Macdonald College, is well known for the excellent work he has accomplished in the study of our bark-beetles (*Scolytidae*). He has published a number of valuable papers in the Canadian Entomologist, and our Annual Reports, and we feel sure there are many more forthcoming. Much credit is also due to the staff of the Division of Entomology at Ottawa for their work on the parasites of the Larch Saw-fly and Spruce Bud-worm, two of the most serious defoliaters of forest-trees in Canada. Dr. Hewitt's work in importing and distributing *Mesoleius aulicus,* a European parasite of the Larch Saw-fly, is of a very important character, whether the experiment is successful or not, for our only hope of getting control of this terrible pest is through the agency of its natural enemies. The Division also deserves credit for the vigorous campaign it is pursuing against the spread of the Brown-tail moth, which has, unfortunately, now become firmly established in New Brunswick and Nova Scotia, whence it has spread from the adjoining New England States. The ravages of this moth and the Gypsy-moth (*Porthetria dispar*) are too well known to need mention here. Both have been introduced from Europe without their natural enemies to keep their numbers in check, and though their ravages have been the cause of the loss of hundreds

of thousands of dollars to the State of Massachusetts alone, and at the present time no effort is being spared by the United States Bureau of Entomology to bring the pests under control. We in Canada have had the benefit of their experience in dealing with this great problem, and it is gratifying to know that the knowledge thus gained is being so vigorously put into practice by our friends at Ottawa.

While thus emphasizing the importance of applied entomology, we must not lose sight of the value of the systematist's work. The economic entomologist deals with insects irrespective of the orders to which they belong and as it is no longer possible for anyone to have an intimate systematic knowledge of all the orders, it becomes necessary for the economic entomologist to depend in large measure upon the systematists in the various orders for the determination of the species with which he has to deal, although it is, of course, true that in many cases the investigator must have first hand information from both standpoints.

On the other hand, the systematic student should be more than a mere classifier of genera and species. Nothing in entomology, except nomenclatural disputes, can be drier than the grinding out of new species and varieties by the man who knows them only by their dead carcasses. The good systematist is a good deal more than a mere separator of genera and species. He is interested in the ecology of the forms he studies, their distribution and the significance thereof, and he keeps the phylogenetic standpoint ever before him in his work of determining specific and group characters. The whole aim of classification being the expression of the natural affinities of organisms, he who fails to observe this point in classifying genera and species has altogether missed the mark.

In Canada there is an immense field for the systematic entomologist in all orders. Some of the orders have been fairly well marked in certain localities of limited area, and a good deal of information on the distribution of species is gradually being accumulated by the Entomological Record, which was first established by the late Dr. Fletcher in the Annual Report of our Society for 1901, and is now conducted by Mr. Gibson. Most of the smaller orders, however, such as the Neuroptera, Plecoptera, Ephemerida and Trichoptera, have been almost wholly neglected by Canadian entomologists, and the scant knowledge we possess of their occurrence and distribution in Canada is chiefly the result of casual captures made by general collectors and determined by specialists in the United States. Among these smaller orders, the Neuropteroid orders as they are collectively termed, are some such as the Ephemerida and Trichoptera that are not only exceedingly interesting in their habits but are of considerable economic importance in furnishing food for fish, a fact that will be appreciated by those of us who had the pleasure of hearing Prof. Needham's address here last year. He showed us how much of the waters of our large swampy areas might be utilized for fish-culture and their productivity increased by the introduction and propagation of suitable species of may-flies. The importance of our inland fisheries and the growing need of exact knowledge of the feeding habits of our fresh-water fishes are urgent reasons why these groups of aquatic insects should receive more attention in Canada than they have done heretofore.

There are still other branches of applied entomology that offer plenty of problems to the entomologist in Canada. The relation of insects to public health is a subject of importance in every civilized community and the great benefit to humanity that has been gained by such discoveries as that of the relation that the mosquito bears to malaria and yellow fever and the house-fly to typhoid fever and

summer diarrhœa of children is now a matter of common knowledge. Fortunately our northern climate renders us comparatively free from the parasitic diseases that are habitually transmitted by insects, but we have the house-fly question ever before us and our domestic animals are all more or less subject to diseases caused or carried by insects, mites and ticks, and there is much to be learned about the life-histories and methods of control of such forms.

Finally, we should at least mention that important aspect of entomology which regards the study of insects not for its own sake nor in its relation to the material needs of mankind, but in relation to the broader science of biology. Insects have contributed some of the most striking illustrations of many of the phenomena that have served to establish the truth of the theory of descent, and have furnished useful material in the investigation of the problems of heredity and the causes of variation and in the analysis of sex. But though these questions are from the standpoint of pure science, vastly more important than any of those we have been considering, they belong rather to the domain of general biology than to entomology, so that we may dismiss them, merely with the comment that they represent an immense field for investigation, full of possibilities of important discovery.

The thought of all there is to do in Canada in entomology, and the comparative ease with which new discoveries can be made here should act as a stimulus to the young student. I say "comparatively" advisedly, for it must not be thought that any good entomological work can be done easily. It is just as difficult, nay more so, to do really good work in a virgin field, as in one that has been long and carefully investigated. The new field has only the advantage of opportunity. The field in entomology in Canada, from the scientific, if not yet from the financial standpoint, is full of opportunity, and we believe that the next decade will witness a steady increase in the demand for the services of well-trained, practical investigators.

Much, we believe, will be done to encourage Canadian Entomology by the publication of the new Catalogue of Canadian insects, which is now in the course of preparation. Now that the question of publication is settled—and the thanks of all of us are due to Dr. Hewitt for bringing this about—it is to be hoped that each and every one of the collaborators will do his utmost to make the catalogue a success and that every collector in Canada may do something to help in making it as complete as possible. In this way we can all do a little for the advancement of entomology in Canada.

SOME INJURIOUS FOREST INSECTS AT DE GRASSI POINT, LAKE SIMCOE.

E. M. Walker, Toronto, Ont.

During the past three years I have spent a part of each summer at De Grassi Point, Lake Simcoe, Ont., where I have been gathering part of the nucleus of a collection of forest insects and their work for the Museum of the Faculty of Forestry in the University of Toronto.

During the season of 1911 this work was greatly accelerated by what was in all other respects a most unfortunate calamity. On June 11 the Point was visited by a terrific windstorm, which wrought great havoc in the woods in this neigh-

bourhood, uprooting and snapping off many hundreds of trees. Woods of second growth poplar were knocked over like ninepins, and trees of all kinds suffered greatly; even sound red oak, over a foot in diameter, being laid low by the terrible force of the elements.

Many of the fallen trees were already weakened by the attacks of insects, among which the Carpenter Ant was most conspicuous, while others, previously sound, now offered favourable conditions for the entrance of various species of wood-boring beetles.

My remarks here, however, will not be confined to such species as were concerned in the effects of the storm, but will include any forms that have been conspicuous for their numbers or the injuries they have caused to forest trees in this locality.

De Grassi Point is a summer resort on the west shore of Lake Simcoe, about three miles from its upper or southern end. It comprises an area of about 350 acres, and has an almost rectangular shore-line, about a mile in length, of which about one-half forms the northern, the other half the eastern boundary. A considerable portion of this area, including the apex of the point, is somewhat higher than the surrounding land, and is composed of a mass of till or glacial clay, well covered with soil and plentifully strewn with boulders, mostly of Laurentian Gneiss. On this clay area is a beautiful grove of tall red oaks, forming next the shore a broad belt among which the summer cottages stand.

Back from this grove there are pastures with scattered trees and bushes, and also much densely wooded land. Owing to the peculiar topography of the place a great variety of forest types are represented in a very limited area.

Extending southward, nearly parallel with the east shore, is a low sand-covered ridge, from which the land slopes gently on each side. The predominant trees on this ridge are white pine and red oak, both of which at one time grew to magnificent dimensions here. There are still a few hoary giants of the latter species, upwards of three hundred years old and still alive, though long past their prime.

On the east side, where the ridge is but a few hundred yards from the shore, the slope is comparatively rapid, the land being thus fairly well drained and supporting for the most part a typical hardwood forest. The prevailing trees here are sugar maple, elm, basswood, red oak, white ash, large-toothed aspen, balsam fir, hemlock and a few beech, yellow and white birch, black cherry and ironwood, and in the spring the rich black soil is starred with magnificent trilliums, adders-tongue, hepaticas, squirrel-corn, etc.

On the other side of the ridge the land is almost level and the forest-types of a very different character, and one which changes gradually as one strikes through the woods to the north shore, the change indicating an increasingly wetter soil. Balsam poplar, aspen, white birch, white cedar, balsam fir, tamarack, white spruce and white pine are the prevailing trees. The higher parts were burned over many years ago, and poplar, birch, cedar and balsam are now the chief trees here, though vigorous young white spruce and some young pine are also coming up.

As we approach the shore tamarack becomes more abundant and black spruce appears, and then we enter a belt of tamaracks among which very few other trees grow. Near the western boundary of this swamp a sluggish creek makes its way to the lake, and its presence brings about other changes in the vegetation. As we near the creek the tamaracks thin out and become smaller, small willows and various shrubs appear, and then we traverse a dense zone of ericaceous shrubs (Cas-

sandra and Andromeda) before coming out upon the broad open marsh which borders the creek near its mouth. The deposits from the creek at its mouth and the action of the winter ice have formed a patch of drier land here, which is continued along the shore as a narrow marginal ridge. Here the trees are different from those in the swamp behind, being mostly cedar, balsam, white spruce, silver maple, black and green ash, with large willows about the margin of the creek.

These woods have been, on the whole, very free from serious attacks by insects for many years past. The only insect that has been responsible for the killing of trees in large numbers is the Larch Saw-fly (*Lygaeonematus erichsonii* Hartgn.), which has been with us for about twelve years. Well do I remember its first appearance at De Grassi Point, although I am not sure as to the exact year. It was either 1898 or 1899, though they may have been present in small numbers a year or two earlier. Up till this time, part of the tamarack swamp was one of

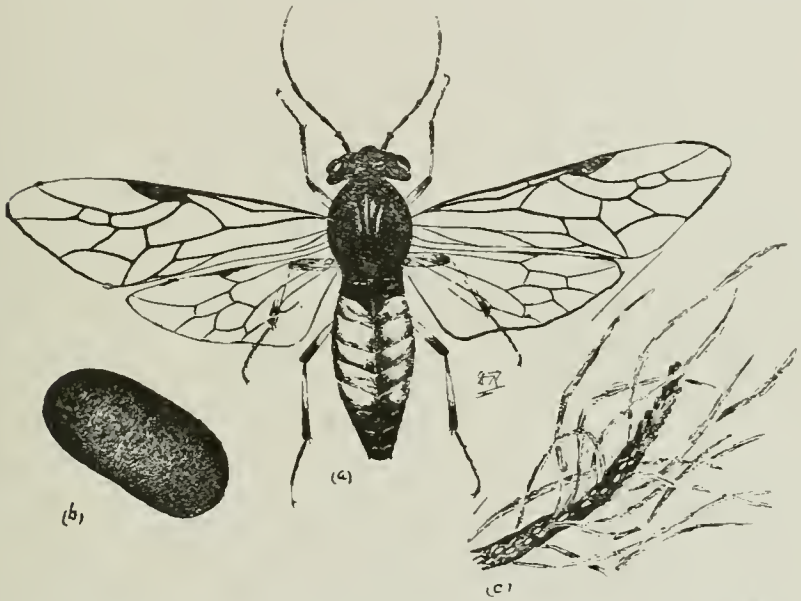


FIG. 24. Larch Saw-fly—*a*, adult; *b*, cocoon; *c*, terminal twig of larch, showing eggs in slits made by the female saw-fly.—*a* and *b* much enlarged.

the loveliest spots I have ever seen. This was a part near the creek where the trees, though not large, grew fairly closely together, but offered glimpses of beautiful vistas between their grey trunks and soft feathery green foliage. No fallen trunks obstructed one's way and the ground was carpeted with deep sphagnum moss and soft grasses, among which pitcher-plants, clumps of the Showy Lady's-Slipper, the beautiful Calapogon and the fragrant Pogonia, besides a number of other orchids, grew in profusion.

In the summer of 1898 (if this year be correct) I visited the swamp, as I do every year, and found to my horror that most of the trees were nearly bare and infested with myriads of greenish-grey false caterpillars, the larvæ of the Larch Saw-fly. The scattered trees in the pastures were but little affected, many of them untouched, but next year the attack was more severe and the trees were everywhere more or less infested, and ever since then until last year there has been no perceptible decline in the numbers of the pest. Every year the trees were stripped nearly bare and the mature ones, of which there were quite a number, soon began

to die. I began to despair of the situation until 1910, when I noted a considerable improvement in the condition of the trees although the larvæ were still disgustingly abundant.

This year (1911) I was delighted to find that they had practically disappeared. Once more the tamaracks retained their beautiful soft foliage throughout the season.

Another saw-fly that has been troublesome of late, though in no way comparable to the Larch Sawfly, is Leconte's Saw-fly (*Lophyrus lecontei*, Fitch). (Fig. 25 is a closely related species.) I first noticed it in 1909 in a grove of young pines about 10 to 18 years old, which have grown up in a part of the pasture that had been fenced in for a few years, thus protecting the seedlings from the cattle a sufficient length of time to give them a start in life. They were confined to a very few trees growing near together, and although one or two very young trees

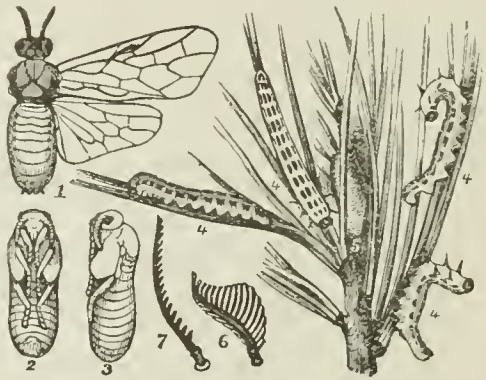


Fig. 25.—Abbott's Saw-Fly (*Lophyrus abbottii*).

were nearly stripped very little other damage was done. In 1910 they appeared again at the same spot but in larger numbers, and affecting more trees. We removed every larva we could find, but on another group of pines about one hundred yards away, which had also been attacked, most of the larvæ were out of reach. As a result there were very few larvæ found in 1911 in the first spot, but on the other one several fairly large red pines were bady defoliated. They occur on both species of pine, but seem to prefer the red.

In 1909 I confined a number of the larvæ but obtained only half a dozen cocoons, which were spun among the pine needles, although the normal habit is to spin underneath leaves and rubbish near the surface of the ground. Although I did a good deal of searching for cocoons under the affected trees I found but two, one of which had been parasitized. Nothing emerged from the bred cocoons, probably because they had been kept too long indoors.

The same grove of young pines in which Leconte's Saw-fly was first found has also been abundantly attacked by the White Pine Weevil (*Pissodes strobi*, Peck). For the last three years I have removed all the infested shoots I could reach with a long pruning hook, but no apparent good resulted as most of the work was done in August, when a large percentage of the beetles had already escaped, and as no provision was made for the liberation of parasites. This season they were rather more abundant than usual, about one-third of all the trees in the grove bearing at least one infested shoot and many having two or three.

This insect particularly affects young bushy trees growing in the open, and

the female ovipositing in the spring always selects one of the terminal shoots of the previous season's growth, generally the leading one. The new shoots grow to a certain extent, varying according to the number of larvæ present. I have sometimes found shoots apparently containing only one or two individuals, whose subsequent growth had not been noticeably retarded, but as a rule they droop and die long before they have attained their full length.

I have never seen a red pine affected by this insect, but this summer I found a young white spruce, whose terminal shoot had been killed, apparently by this weevil. It was growing among the pines of the same grove in which the weevil was so common.

Another insect that was more abundant than usual in white pines in the season of 1911 is the Pine-bark Aphid (*Chermes pinicorticis,* Fitch). In 1910 I noticed a single tree about eight inches in diameter, the bark of whose trunk was almost covered on one side by the white flocculent material secreted by this aphid. One other tree near by was also affected, though to a much less degree, but no others were seen on which this insect was present to any noticeable extent. This year the

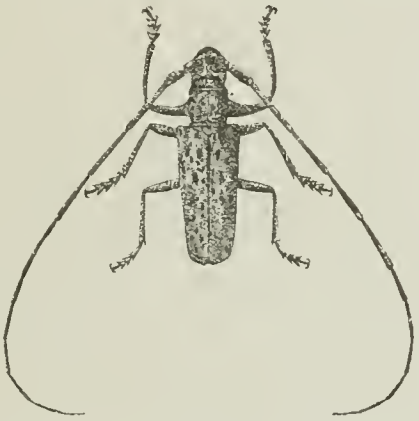


Fig. 26.—*Monohammus confusor*—Male.

Chermes was found on quite a number of trees on the ridge, but it is still rather local. It seems to prefer the smooth bark of the trunk but also occurs on the branches and may attack saplings two or three feet high, as well as larger trees. One side, apparently the most sheltered, is generally more thickly covered than the rest.

When I first saw the diseased trees about the end of July the aphids had already disappeared, but as the flocculent material is left upon the bark their former presence is readily detected. No apparent effects in the vigour of these trees could be detected, and in fact the white pine is on the whole a very healthy tree at De Grassi Point. A number of young trees were affected by a twig blight in 1910, but this did not reappear to any extent in 1911, and the unusual number of spittle insects in the former season also failed to assert themselves during the summer of 1911.

As a result of the windstorm, however, a number of fine white pine were uprooted or had their tops or even the upper half snapped off. When I first went to the Point, near the end of July, these fallen trees already harboured hosts of bark beetles and *Monohammus* larvæ. The bark beetles were chiefly *Ips pini,* Say, and *Pityogenes sp.,* a very common, though as yet undescribed, species. The former was

extremely abundant in all fallen trees, occurring along the entire length of the trunks and in branches down to about two inches in diameter. The largest trunk in which they were found were about eighteen inches in diameter, though the bark was not very thick and the trees probably not more than about 80 years old. No pitch tubes were present in any of the trees, in fact there was nothing to indicate that any of them had been attacked before the storm occurred.

The first work of this species that I saw was on July 29. On this date the majorty of the mines contained larvæ that were mature or nearly so, but pupæ and young adults were also numerous. On the other hand a few of the galleries contained very young larvæ, just beginning their mines, and there were still a few female adults running their primary galleries. On Aug 8 and 12 mature larvæ, pupæ and pale young adults were all abundant, but there were still a few adults of the first generation about. By the end of the month most of the beetles had emerged but they were still quite numerous under the bark.

A few specimens of *Ips caelatus,* Zimm., were associated with *I. pini* in some of the trees, but no signs were noted of the presence of *I. calligraphus,* Germ., a species that is very abundant at Toronto, where the pines are all dying about the city, though not as a direct result of their attacks. This was probably simply due to the fact that no very old trees were blown over in the storm, and it is the thick bark of old trees that is chiefly affected by *I. calligraphus.*

The little *Pityogenes sp.* was extremely abundant in recently dead branches and upper parts of the trunk of white pine at De Grassi Point. I found a prostrate pine about eight inches in diameter near the base, the inner bark of which was a perfect network of galleries of this species along its entire length. It was associated except in the smaller branches with *Ips pini* which was almost equally abundant. The galleries are very regular and the primary ones unlike those of the *pini* are run transversely to the axis of the stem, the lateral mines being for the most part straight and perpendicular to the primary galleries. The species is of little or no economic importance on account of its attacking only the smaller dead trunks and branches.

Resembling this species considerably in size and general appearance and in the character of its work is *Ips balsameus,* which is found in considerable numbers in the trunk of a balsam fir which had fallen in the storm. This tree had been a very vigorous one and was nearing its prime when its life was thus suddenly cut off. Larvæ, pupæ and imagoes were found throughout August and were still present when I left early in September. This was the only balsam in which I found this bark beetle. Several other fallen treees were examined, but the only borers found were larvæ of *Monohammus* which were universally present.

These were also abundant in all of the fallen pines, but were for the most part small, doubtless having hatched from eggs deposited the same season. In one of the large trunks, however, many large larvæ were found which must have entered the trunk during an earlier season. Some of them were found in large excavations under the bark, but others had penetrated deep into the wood. No adults or pupæ were seen.

The only other injurious insect that has been noticeably abundant in late years upon the conifers at De Grassi Point is the Spruce Gall Aphid (*Chermes similis,* Gill.). The loose twisted galls of this aphid are exceedingly common on white spruce at Lake Simcoe, especially on sickly stunted trees. Whether they are in some measure the cause of the unthrifty condition of such trees or simply prefer trees of poor vitality I am uncertain, but they are often abundant also in

otherwise vigorous-looking spruce. The affected twigs are generally killed but sometimes recover, leaving only a twist in the branch.

In the season of 1910 the galls were very numerous on some of the scattered trees on the sandy ridge, but some seemed quite free from them. The black spruce in the swamp near the creek were also heavily infested with galls, which I took to be the same but which may be *C. floccus,* Patch, as I have not seen the adult aphids. In 1911 scarcely a gall was to be found on either white or black spruce.

In 1910 I came across *Chermes abietis,* L., for the first time in this district. In Toronto the two species *similis* and *abietis* are almost peculiar to the white and Norway spruce respectively, and I had never seen *abietis* on any other spruce. I found it, however, in considerable numbers on a single, large white spruce, grow-

FIG. 27. *Chermes similis*—*a*, nymph; *b*, gall on spruce.

ing in the open on the sandy ridge at De Grassi Point, and although many other trees were near at hand I could not find a single gall of *abietis* on any one of them. On the other hand, *C. similis* was present on the other trees but not on the one which bore the galls of *abietis.* In 1911 a few galls of *abietis* were taken from two or three white spruce widely separated from one another.

Fallen spruce were as yet very little injured by borers. The common spruce borer *Polygraphus rufipennis,* Kirby, was taken but once. Perhaps next season will yield a larger number of wood-boring beetles.

Of the insect enemies of deciduous trees at De Grassi Point, the only species that has been very conspicuous for its injuries during the past few years is the Birch-leaf Skeletonizer (*Bucculatrix canadensisella,* Chamb.). This insect was

particularly abundant in 1910 and 1911, when practically every birch leaf was the home of several of the little caterpillars. About the end of July, this season, I first began to notice the work of the young caterpillars, and by the end of August the birch leaves were pretty well skeletonized and many of the larvæ were spinning their curious elongated ribbed cocoons. Caterpillars were constantly falling from a birch overhanging the cottage verandah and spinning their cocoons upon the floor, and in the cracks between the boards. The birch leaves turned yellow and fell very early this season, possibly as a result of the attacks of these larvæ.

Birch and several other trees were also attacked this year by large numbers of lace-bugs (*Corythuca arcuata,* Say). These insects puncture the leaves chiefly about the midrib and larger veins on the underside, thus rendering them pale and patchy in appearance.

Of wood-boring insects the one whose work was by far the most conspicuous is the large black carpenter ant (*Campontus hercuieanus,* L.). A good many trees that were blown over by the storm were more or less weakened

Fig. 28. Flat-headed Borer—larva, pupa and beetle.

by the work of this insect. It does not attack the living wood but excavates irregular galleries in the dead heart wood, thus weakening the tree and rendering it unmarketable. Pines, balsams, poplar and red oak were all conspicuously attacked by this ant, particularly the trees on the wooded part of the sandy ridge, where most of the pines and many other trees showed basal wounds, the result of ground fires many years ago. Some of these wounds had been completely closed by the new growth of tissue, but the dead wood beneath was, in all cases examined, honeycombed by carpenter ants.

Fallen oaks were not yet attacked to any extent by borers. A few young cerambycid larvæ of an undetermined species were found under the bark of one sound tree, only recently dead, but, with this exception and that of the ants, the only wood-eating insects found in the oaks were a number of larvæ, one pupæ and several imagoes of the small stag-beetle (*Ceruchus piceus,* Web.). These were taken from the rotten and partly decayed heart-wood of a large tree which was still alive when it was blown over in the storm.

In several fallen balsam poplars were found a considerable number of larvæ of a *Chrysobothris,* which I take to be the common flat-headed borer (*C. femorata,* Fabr.), many of which were too large to have entered the trees during the same season. Most of the grubs were found about the end of August in their flat irregular excavations in the inner bark and superficial layer of the wood, but some had begun to extend their galleries deeper into the wood .

Occurring with the *Chrysobothris* in the balsam poplar and also in the large-toothed aspen were a good many specimens of a very long, slender Agrilus-like Buprestid larva, which I have not yet had determined. The galleries of the larva were likewise slender and extended regularly with the growth of the grub. They generally followed an exceedingly tortuous course. The grubs were fully as numerous where found as the *Chrysobothris*. Many young specimens of the latter were also taken from a small elm, which had been uprooted in the storm.

Of the larger trees none suffered in the storm so severely as the basswood. The few remaining trees of the original forest were practically all laid low. Many of these were rotten at the centre and some weakened by carpenter ants, but, except in one tree, I found scarcely any evidence of the recent work of borers. In one fairly large tree, however, I found many half grown cerambycid larvæ, possibly those of the linden borer (*Saperda vestita*, Say), and two scolytid mines, containing larvæ, and one of them a single adult. This was submitted to Prof. Swaine, who reports it to be a new species of *Hylesinus*, related to the western *H. aspericollis*.

In conclusion I wish to express my sincere thanks to Prof. Swaine for his kindness in determining for me the species of Scolytidæ mentioned in this paper.

THRIPS AFFECTING OATS.

C. Gordon Hewitt, D.Sc., Dominion Entomologist, Ottawa.

Reference was made by me at our last annual meeting to the injuries caused to oats by some species of Thrips and as further observation have been made during the past season concerning the injuries of these insects, it seemed to me that a useful purpose might be served if this subject were discussed a little more fully.

During the last year or two we have received frequent inquiries regarding the "blighted" appearance of the heads of oats and a number of specimens were received, in one or two of which dead Thrips were found, but it was impossible to determine the species with certainty. The injuries were reported from various provinces from Nova Scotia in the east to British Columbia in the west. A correspondent on Vancouver Island stated that over 50 per cent of a fourteen-acre field of oats were attacked. On some heads of oats received from Saskatchewan, from 50 to 70 per cent. of the ears were destroyed, and generally it would appear that the injuries are on the increase. During a visit to Washington early in the year Mr. F. M. Webster, of the Bureau of Entomology, showed me a single record of Thrips attacking oats, the species being *Anaphothrips striatus*, Osborn. An investigation into these injuries was begun during the present summer, my attention being confined to the oats grown in the seed plots at the Central Experimental Farm at Ottawa, where it was found that the species commonly occurring and obviously responsible for the injury was the Grass Thrips, *A. striatus;* Dr. W. E. Hinds very kindly confirmed my identification. A second species, *Euthrips nervosus*, Uzel, was also found in small numbers. The Grass Thrips commonly attacks Kentucky Blue Grass (*Poa pratensis*), and Dr. Fletcher has recorded in 1882 and 1892 the occurrence of the "white top," produced by this insect's injuries, in *P. pratensis* and also in one or two other grasses such as Timothy (*Phleum pratense*) and Couch Grass (*Triticum repens*). The investigations showed that the blighted appearance

was caused by the fact that the insect injuries produced sterility in the ears and the young and adult insects were found feeding on the flowers, especially on the ovaries which, of course, produce the grain. It was further found that these injuries take place while the inflorescence is enclosed in the leaf sheath, and on this account the lower ears of the inflorescence are usually the ones to be injured and rendered sterile, as they remain longer in the leaf sheath. In further support of this it was found that where the top of an inflorescence has been held by the leaf sheath, as is sometimes the case, the apical ears may be sterile. Specimens of both these types of injury will be seen in the cases which I am passing around. With a view to ascertaining the extent of these injuries, stalks of different varieties of oats were collected and the number of sterile and perfect ears on each stalk were carefully counted. It may be remarked that in order to eliminate a cause of error resulting from the unintentional selection of stalks unusually affected, an equal number of stalks were collected by one who was ignorant of the purpose for which the oats were required. It is not intended to give here the complete results of this statistical study, but the following facts may be of interest.

The most severely injured variety of oats on the average was "Banner M," 19 heads of which variety had an average of 36.3 per cent. of sterile ears. The least attacked was "Abundance, Garton's Regenerated," 11 heads of which gave

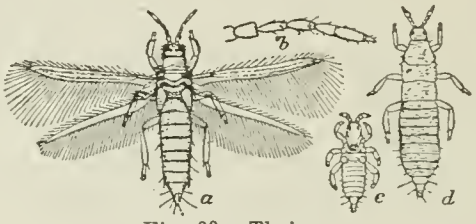


Fig. 29.—Thrips.

an average of 17.3 per cent. sterile ears. The maximum percentage of sterile ears in all the heads examined was 56.8 per cent. in a head of "Banner M." The minimum percentage of sterile heads was found in a head of "Banner H," of which 3.5 per cent. were sterile.

From these figures it will be realized what a serious effect the injuries caused by these insects may have on the yield and to what extent their injuries may reduce the number of bushels produced, as no other cause of the sterility of the ears could be discovered.

The Grass Thrips *Anaphothrips striatus,* is a very small insect measuring about 1-16th of an inch in length and of a yellowish, or brownish-yellow colour. The adults are provided with four narrow wings which are fringed with hairs, hence the name of the group *Thysanoptera.* They are also called *Physopoda,* on account of their possession of bladder-like feet, from which they derive their German name "Blasenfüsse." Their nourishment consists of the juices of the flowers and plants and their mouth parts are very peculiar in that they are adapted for both sucking and biting. The life history of this species has been previously worked out by Hinds. The females will continue to deposit eggs and young larvæ may emerge up to the time the snow falls, when the adults hibernate. Their resistance to a low temperature appears to be very great, as they can withstand an exposure of minus 21 degrees F. In the spring, soon after the snow disappears, the females, which have passed the winter in the leaf sheaths of young plants, become active

and begin to deposit their eggs. In the spring the eggs hatch in ten to fifteen days; in the summer they will hatch from four to seven days after deposition. The larvæ are similar in general form and appearance to the adult except in the possession of wings. They become full-grown in the spring in about two weeks but in the hot days of summer the larval stage may be completed in four days. The whole life cycle occupies from 12 to 30 days. The first winged adults usually appear in May or June. An interesting point in connection with this species is that it is parthenogenetic, that is, the eggs will produce young without fertilization; Hinds has examined thousands of specimens of the species and has been unable to discover the male. The ability of the female to deposit eggs which will develop into young without the necessity of fertilization by the male increases the reproductive power of the species enormously and we have in this insect a similar phenomenon to that with which you are already acquainted in the case of the Aphides, whose extraordinary fecundity is due, in a large part, to the parthenogenetic character of the female.

Feeding as this species does on wild grasses of various species, which flourish in abundance everywhere, it will be readily understood that its control will be a matter of considerable difficulty, as the Thrips migrate from one species of a plant to another. The only method of control which will ever give any appreciable results on a large scale are methods of cultivation and farm practice. The destruction of weeds, especially those belonging to the family Gramineæ, is essential. The Thrips appear to hibernate in places where they have been feeding, such as the stems of grain which have died down, in crevices of the ground or under rubbish, and the best method of attacking the insect in the hibernating stage is by burning over the grass or stubble in the fall or the deep ploughing of the soil. These two methods may be employed conjointly. Korolikoff, who has been studying the different species of Thrips injurious to cereals and grasses in Russia, near Moscow, recommends the sowing of strips of such crops as rye or oats round the field under cultivation. These "bait" crops, as they might be termed, are sown about a fortnight before the time of the sowing of the winter cereals in order that they will be the first to attract the Thrips and afford them shelter while the crops are growing. They are afterwards cut and their removal results in the removal of a large proportion of the Thrips.

As I remarked, however, at the outset, this investigation has only just begun and my statements are only in the nature of a report on progress in the hope of enlisting the assistance of any of the members, should an opportunity occur to them of supplying us with information which might be useful.

THE STREAM.

Rev. Thomas W. Fyles, D.C.L., Hull, Que.

Come, track with me this little vagrant rill,
Wandering its wild course from the mountain's breast;
Now with a brink fantastic, heather-drest,
And playing with the stooping flowers at will;
Now moving scarce, with noiseless step and still;
Anon it seems to weary of its rest,
And hurries on, leaping with sparkling zest
Adown the ledges of the broken hill.

So let us live. Is not the life well spent
Which loves the lot that kindly Nature weaves
For all inheriting, or adorning, earth ?
Which shows light pleasure over true content,
Blossoms with fruitage, flowers as well as leaves,
And sweetens wisdom with a taste of mirth ?
—*Thomas Doubleday.*

It was "a land of brooks of water, of fountains and depths that spring out of valleys and hills."

In one of the brooks I had a particular interest, for it ran through my own meadow, and under my windows, and bounded two sides of my garden. A quarter of a mile beyond, it "turned a mill."

I had in those days what the poet Samuel Rogers desired when he wrote:—

"Mine be a cot beside a hill;
A bee-hive's hum shall soothe mine ear;
A willowy brook that turns a mill,
With many a fall shall murmur near."

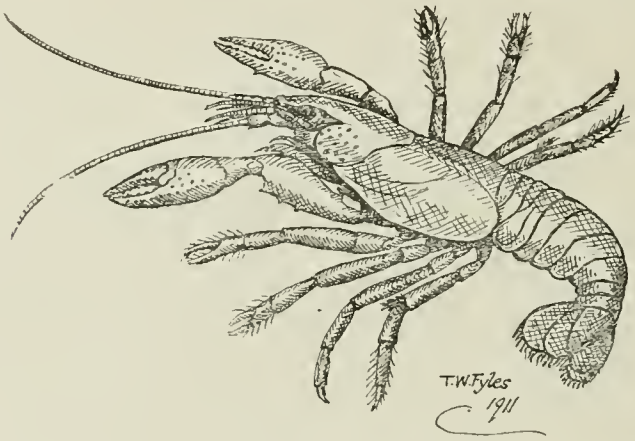


Fig. 30. Cray-fish.

One day I resolved to trace the stream to its source. I found that it was not the discharge of a mountain tarn, as many a brook in that part of the country is. Like the River Thames, in England, it took its rise in a spring, and increased in volume from the outflow of other springs, and from the surface drainage of the hill-sides.

One of the tributary springs was near my house. It had been "cleaned out" and a bottomless half-barrel inserted; and this was always full, and running over, with pure, translucent water. The movement of the sand at the bottom of it could be seen as the water bubbled up.

One day, on looking in, I noticed two creatures crawling over the sandy bottom of the spring; they were Cray-fish. I fished them out and placed them in a vessel of water, that I might observe them closely. What strange creatures they were! They had nippers like the scorpion; stalk-eyes like the chameleon, antennæ like an insect, and fan-tails like the birds. They seemed a freak of Nature.

It was interesting to watch the backward movement of the cray-fish to escape a threatening object—it was made by an undersweep of the tail. Meanwhile, the creature never came into collision with anything behind it. It kept one eye on

the point of danger, and turned the other upon its way of retreat. The eyes played in grooves which served as squints.

After the brook became a feature of the landscape it passed through a small beaver-meadow. The beavers had long since been exterminated, and their dam broke down, but the remains of it could be traced. This meadow was a valuable possession, for here the owner cut the winter fodder for his few cows. The Blue-joint Grass (*Calamagrostis canadensis,* Beauv.) grew in it; and it is not bad "feed."

The farmer returning to his home, through the meadow, on a dark night, saw what he took to be a tree-stump a short distance from him. He crossed the stream and reached his dwelling. There the thought struck him,—*Why, there is no stump there.* In the morning he went down to see. There *was* no stump; but, in the soft ground near the brook, he found the foot-prints of a large bear which had followed him so far.

On a certain occasion, sitting by the brook in an idle mood, I wrote these lines:

See, where the rippling rill with many a bound—
Restless, as is a lambkin in its play,
Amid the verdant meadows winds its way—
A band of ribbon on a velvet ground.
Now glancing gaily o'er the pebbled shallows,
Now, in a deeper channel, slowly gliding—
Fondly lingering, but ne'er abiding.
It may not stay.
Where yellow-lilies made its mimic waves their pillows,
And arrow-heads its bosom pierce.
Now 'tis hiding
Amid the meadow-sweet, and flags, and willows,
And now, with current fierce,
It breaks away.

In those days the little stream abounded with Brook-trout (*Salvelinus fontinalis*). The speckled beauties lay hid in every eddy, and under shelter of every stone. I often rose at daybreak and caught a dish of them for breakfast.

It is said that the Black Fly is an enemy to the fish: certainly it is not a friend to the fisherman. *It* will bite, and bite freely, whether the fish will do so, or not.

Harris, in "Insects Injurious to Vegetation," page 601, describes our Canadian Black Flies under the name of *Simulium molestum.* Baron Osten Sacken, in the "American Entomologist and Botanist," page 229, gives an interesting account of their "Transformations," and Oskar Augustus Johannsen, in part 6, of Bulletin 68, "published under direction of Ephraim Porter Felt" in 1903, well describes many kinds of these blood-thirsty little creatures. There is a host of them We are quite satisfied with those that favour us—we have no desire to witness additions to their numbers.

After leaving the mill that I have mentioned, the stream passed through an "intervale" of considerable dimensions. This was a grand place both for plants and insects. In it grew the Queen of all our Orchids.—*Orchis spectabile,* L., glorious with its large scroll-like blossoms washed with carmine. The Marsh Marigold (*Caltha palustris,* L.), the Purple Loosestrife (*Nesea verticellata,* H.B.K.), the Field Lily (*Lilium canadense,* L.), the Large Blue Flag (*Iris versicolor, L.*), the Larger Bur Marigold (*Bidens chrysanthemoides,* Mich.), all common, but all showy, did their best—each in its season—to

"Make so gay the solitary place."

On a day in July, when passing through the intervale, I saw a good-sized dark caterpillar scuttling away before me. I captured it, and in a day or two it turned to a chrysalis. Early in August there came from it the rare and beautiful moth, *Darapsa versicolor,* Harris. The specimen is now in the Provincial Museum at Quebec. The food-plant of *D. versicolor* is the Button Bush (*Cephalanthus occidentalis,* L.). The late Rev. Dr. George D. Hulst bred this species from the egg, and described it in all its stages. (See Can. Ent., Vol. X., p. 64.)

That beautiful butterfly, the Baltimore Fritillary (*Euphydryas Phaeton,* Drury) was found there. Its larvæ are gregarious and hibernate in a web. Their food-plant is the "Turtle Head" (*Chelone glabra,* L.).

Looking down upon this intervale, from one of the neighbouring hills, one calm summer night, I witnessed a wonderful spectacle: spread out, as it were, over the valley, was an undulating sheet of fire. Myriads of the beetle *Photinus corruscus,* L., were sporting at a height of a few yards from the ground, and so multitudinous were they that their flashes seemed continuous.

Passing along the banks of the stream in its broader reaches, the water plants took one's attention.

There was that remarkable dicœcious stemless plant the *Vallisneria spiralis,* L., with leaves like green ribbons growing under water. Its inconspicuous female blossoms are attached to stalks sometimes three or four feet long. They rise to the surface and open. The clustered male blossoms are held in conical spathes below. In due time they break away from these and surround the female blossoms. When the latter are pollinated, their stalks coil up like a spring, and draw them under, that the seed may be ripened beneath the surface.

Favourite plants with the landscape painter are the Arrowhead (*Sagittaria variabilis,* Engelm.) and the Yellow-lily (*Nuphar advena,* Ait). The clean-cut upright leaves of the former, and the large oval leaves of the latter, show well in a river scene.

Another fine plant is the Wild Calla or Water Arum (*Calla palustris,* L.). Its white spathe throws out its spadix, which is thickly set with small greenish blossoms: and its heart-shaped shining leaves and generally trim appearance are very attractive.

After passing through the intervale, the stream ran through two or three farms, and then discharged into a beautiful lake which was about a mile long, and was embosomed in the hills.

At the mouth of the stream there was a growth of alders rooted in the shallows of the lake, and in these shrubs the handsome Red-winged Blackbird (*Agelaius phœniceus*) built its nest.

Amongst the alders was a small island. Landing upon this, one day I nearly trod upon two eggs of the great Northern Diver (*Gavia imber*), which were laid upon the bare ground. They were fine eggs, four inches long, two and five-eighths inches broad, of a brownish green hue blotched with dark brown.

Of the feathered ichthyophagists that frequented the stream and lake, two were pre-eminent, monarchs of the waters—the Great Blue Heron (*Ardea herodias*) and the Northern Diver (*Garia imber*). Their methods of fishing were very different, and there appeared to be no rivalry between them. The Diver was all activity. Its trim form, its close plumage, its strong limbs set well back, its large webbed feet, bespoke the powerful swimmer and diver: and woe to the fish that came within its ken. The Heron, on the other hand, was a model of dignified repose. It seemed to rely upon the principle—"Everything comes to those who wait." It took

its position in some shallow near the bank, raised itself to its full height, rested its dagger-like bill on it breast, and *waited*. The Summer breeze agitated the bulrushes growing near, but did not move the stately bird. By and by a frog plunged into the water from the bank, or an eel wriggled out from the roots of the flags; and then—that sharp bill descended with lightning rapidity and transfixed the intruder.

A pair of Belted Kingfishers frequented the mill-pond up the stream. They had their nest in a hole in the bank, under the roots of a tree. While the female sat upon her batch of white eggs, the male fished for her support. He took his perch on a branch of a tree overhanging the pond, and watched. Soon a silvery gleam showed where a minnow was at play; and then, like an arrow from a bow, the bird darted down into the depths in pursuit.

The kingfisher swallows its prey whole, and afterwards disgorges the bones in pellets. The brooding kingfisher does this, and so its nest becomes matted with fish-bones, which serve to keep its young from the cold earth.

There is an English bird whose aquatic feats excel those of the Northern Diver and the Belted Kingfisher—it is the Water Ousel (*Hydrobata cinclus*). I have watched this bird running at the bottom of a clear Yorkshire stream, seemingly as much at ease as the Wagtails that run along the bank.

A high and sandy part of one of the banks of the stream was much frequented by the Spotted Sandpiper. One or two pairs usually raised their young not far from my home. They were graceful birds. In colour they were olive-brown above, prettily barred with black. Beneath, they were white and much speckled. They seemed to be so delicately balanced upon their long legs, that they were constantly pitching forward. This habit gained for them the common name of "Tip-up."

This name reminds me of one of my neighbours, who entertained some peculiar ideas. He believed that every successive generation of men was "wiser and weaker" than that preceding it. When asked what he could show in support of this notion, he said, "We read* that the king of Rabbah wore a crown that weighed a talent of gold (117 lbs., 19 dwts., 16 grs.). Fancy old Billy yonder"—pointing to a diminutive specimen of humanity—"with a hundredweight of headgear. *Why he'd go bobbing round like a tip-up.*"

One early morning I was gratified with an unusual sight: I surprised a pair of mink as they were sporting on the brink of the stream. When they caught sight of me they quickly disappeared.

The Stoat (*Putorious noveboracensis*) was more frequently seen, whether in its summer coat, or its winter ermine. Walking along a lane that crossed the brook, on an Autumn day, I heard a rustling in the dry leaves by the wayside. I stood still. Presently a field-mouse (*Microtus pennsylvanicus*), and then another, dashed into the road, and away, up the opposite bank. In a moment or two I heard a more stealthy tread, and then out came a stoat with its nose to the ground, following the exact course of the fugitives. It was tracking them by the scent, as a hound tracks a fox. How could a mouse escape such a foe?

Another interesting creature that frequented the stream was the Painted Turtle (*Chrysemys picta*). This reptile was very gay, with rose-coloured bands and stripes along its sides, and under the edge of its carapace. It was fond of sunning itself on a stone or log. It deposited its eggs in the sandy banks of the stream, and left them to hatch of themselves. The young ones readily found their way to the water.

*1 Chron., ch. xx, 1st and 2nd verses.

I have told of some of the natural objects that engaged my attention during my residence in a retired country-place. There were many others that I may not tell of now. In searching them out, and studying them, I was never at a loss for amusement; and the remembrance of them gives me pleasure still. I would say to every head of a family, who is in a position to follow the advice: Take your wife and children to the country every summer for change and relaxation, and that they may follow Nature Studies at first hand. They will soon feel, as Shakespeare felt when he penned the words that have been so often quoted, but are so beautiful that they cannot become hackneyed—

> "This our life, exempt from public haunt,
> Finds tongues in trees, books in the running brooks,
> Sermons in stones, and good in everything."
> —*As You Like It*, Act II., Sc. 1

A HYMENOPTEROUS PARASITE OF HEPIALUS THULE.

Albert F. Winn, Westmount, Que.

The late Dr. H. G. Knaggs in his "Lepidopterists' Guide," says that the grand secret of successful insect collecting lies in one little word—*Why?* The statement is so very true that it is rather a wonder that the word has not been adopted as a motto for some Entomological Society; perhaps, however, it is best left as common property for all.

In studying up the habits and history of our special Montreal insect *Hepialus thule*, we have been confronted with many questions, but we now know and have published sufficient particulars to show that instead of being an exceedingly rare insect it occurs in its own peculiar localities in vast numbers, and its life history is known except the larva from after the first moult till it becomes about five-eighths of an inch long.

One question that has bothered us for many years in connection with this moth is—Why should the Hepialidæ lay so many eggs? Most moths lay about 300, but the ghost moths lay over 2,000, which on the average must mean that 1,998 fail to produce imagos out of the 2,000. What enemies have they more than their relatives that makes this provision necessary? Before their habits were known, it was thought that they bored in the trunks of some of the large trees, much as do the Cossidæ or goat moths, and the woodpeckers were suggested as doing more than their share of destroying the larvæ. But down below or at the surface of the ground the caterpillars in the stems and roots of the swamp willows are perfectly safe from woodpeckers.

It seems quite possible that the largest loss of life occurs in the tiny larvæ freshly hatched from the egg failing to find a suitable supply of food, for Mrs. Ghost Moth is apparently an improvidential mother, and does not as most moths and butterflies do, namely, deposit the eggs on the particular plant whereon the larvæ feed. The Hepialid females fly about dropping the eggs to the ground as they go, resting a few moments and starting off again in great arcs of a circle. Whether the little larvæ can sustain life by nibbling at such food as may come in their way till they strike a willow root we do not know, neither do we know whether any creature makes a meal of the minute eggs so carelessly scattered, but a great many larvæ do find their way into suitable quarters as is evidenced by the labyrinth of tunnels found when a clump of willows is dug up and split open.

The next source of high mortality seemed to be in the imago state, as numbers of separate wings of the moths have been found lying on the ground, suggestive of the work of bats; night hawks have also been seen flying about the swamps, but neither bat nor bird has been caught in the act of gobbling a Hepialus. Two years ago we found that many of the wings lying about the bushes were quite soft and not fully expanded, showing the moths had been devoured between 5.30 and 7 p.m., while they were drying their wings preparatory to their first flight, and some small animal is doubtless well supplied with dainties for the few days annually that the moth flies. In our digging operations a few larvæ and pupæ were found attacked by a fungous disease—a species of Cordyceps, specimens of which were exhibited at our 1909 annual meeting, but till this year no insect parasite has been met with, nor do I know of any record of a parasite of any North American species.

On June 23rd, Prof. Swaine and myself spent a couple of hours in a swamp at St. Anne de Bellevue, digging among the willows, resulting in our finding a good many larvæ and a few pupæ. Owing to our not having all the necessary implements with us we managed to chop in half a great many more of both than we secured intact. Two pupæ that I kept looked particularly healthy, and were kept in a roomy cage with plenty of leaf mould and moths were looked for with a degree of certainty. The larvæ were put in a tin box filled with the leaf mould and were only taken home for inflation for cabinet specimens, as they evidently would not produce moths till 1912, and no attention was paid to them. Early in July I opened the box, expecting to find the larvæ shrivelled up and dead, but instead found the mass healthy and active as ever. The cage with the pupæ was looked at daily, but no moths appeared, and although still flexible at the joints it became evident that it was too late for them to produce moths this year. The larvæ continued to prosper on their starvation diet, and on July 14th, as I was leaving town for my holidays the following day, I sent the larvæ and one pupa to Mr. H. Dawson, Hymers, Ont., to whom I am indebted for much information and many specimens from that locality, telling him that the pupa apparently would not live, and the larvæ on the contrary refused to die. The larvæ lived till August, some five weeks, without a bite of willow wood, and the pupa produced a fine Ichneumon which Mr. Gibson has kindly had identified by Mr. W. H. Harrington as *I. decinctor* Say. My pupa also produced an Ichneumon during my absence but escaped in some way. So we now know that there is at least one Hymenopterous parasite, and are confronted with the question of how does it manage to get at the larva to attack it? Two methods seem possible: first, by stinging the larva when it is engaged in cutting the exit hole for the moth to escape through, or second, by finding the freshly cut hole and entering bodily and following the tunnel down to where the mature larva or freshly formed pupa is. Another species of Ichneumon, *I. subdolus*, has been found to be parasitic on a boring moth larva, *Gortyna immanis*, but the stems of the hop vine do not seem as secure a hiding place as the roots of the willow.

While it is often a great disappointment to a collector who has spent time feeding and caring for larvæ to have them produce Ichneumons or other parasites instead of moths, one is often compensated by the fine condition the pupæ or chrysalids are left in for cabinet specimens, besides what is learned of the relationships between the destroyer and the destroyed. As well as the pupa of *Hepialus thule* you will notice in the box a chrysalis of *Papilio asterias*. In both cases the parasite escaped through neat holes in the sides instead of bursting the shell completely as the moths and butterflies do in the natural course of events.

INJURIOUS INSECTS OF THE YEAR, MACDONALD COLLEGE, QUE.

J. M. Swaine, Macdonald College, Que.

Saperda candida, and Chrysobothris femorata, the Apple tree borers, have not been so numerous in this region as formerly.

Schizoneura lanigera, the Apple Woolly Aphis, has been quite common, and on some young trees distinctly injurious. Many scars were formed on the smaller branches. I have no record of the occurrence in Quebec of the root form of this insect.

Lepidosaphes ulmi, the Oyster Shell Scale, is very common in Quebec orchards, and too often neglected entirely. The spring spray with lime-sulphur holds it in check. This is, so far, our only orchard scale of importance.

Oberea tripunctata, the Apple-twig Oberea, has been recorded in large numbers from various parts of New Brunswick, and it may become a troublesome pest. It is not yet recorded from Quebec. Its work in the apple twigs resembles that of *O. bimaculata* in raspberry canes.

Malacosoma americana and *M. disstria*, the Apple and Forest Tent Caterpillars, were extremely common this season, and injurious in unsprayed orchards. Their egg masses are to be found now in great numbers.

Fig. 31.—Round-head Apple-tree Borer—*a*, larva; *b*, pupa; *c*, beetle.

There was not much injury from Bud Moth or Case-bearers in our locality; and canker worms were rarely seen.

The Pear Blister Mite has not yet troubled our Quebec orchards, though possibly we shall need to control it later.

Rhagoletis pomonella, the Apple Maggot. This insect has been recorded this season from many parts of Quebec Province, and is in some districts very injurious. It is very evident that the pest is becoming widely distributed, and that it should be neglected no longer.

So far as known at present the only practical method of control is the careful gathering of the fallen fruit. Through the first part of the season these fallen fruits should be rigidly gathered and destroyed—boiled and fed to stock—every day, or every second day.

It would be interesting to know to what extent this insect breeds in the fruit of the hawthorne. It is recorded several times as breeding in haws. This season we found the haws about the Macdonald College badly infested with maggots. From them we bred flies that I cannot distinguish from those bred from apples. The hawthorne bushes are numerous in the neighborhood of the College; but we are not troubled as yet with the Apple Maggot. The subject is interesting.*

* Since writing the above, the specimens bred from haws have been determined by Prof. J. M. Aldrich as *R. pomonella* Walsh.

Conotrachelus nenuphar, the PLUM CURCULIO. This insect has been more than usually destructive to apples in the Eastern Townships this season. In many districts it is our most destructive apple fruit insect.

Poison sprays are only partly effective in its control, and need to be supplemented by careful destruction of the fallen fruit, particularly the small fruits which drop early in the season. In controlling this insect lead arsenate should be used, three to four pounds per barrel for the first two summer sprays.

Cultivated orchards are less seriously affected than those in sod. Surface cultivation in July and August, pruning and spraying all tend to keep the beetle in check. Haws and wild plums, in which the Curculio breeds, and neglected orchards, serve as centres for breeding and distribution of this as well as other apple-fruit pests. Nearby orchards, no matter how well cared for, may be seriously infested.

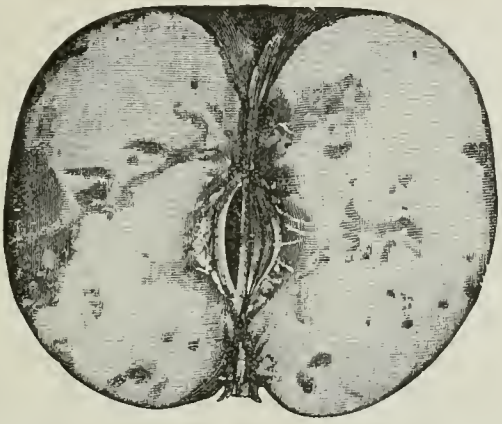


Fig. 32.—Fruit injured by the Apple Maggot.

Anthonomous quadrigibbus, the APPLE CURCULIO. We have the Apple Curculio in injurious numbers in the region about Covey Hill.

Carpocapsa pomonella, the CODLING MOTH. We have heard less of the Codling moth in Quebec orchards this season, probably because the Maggot and Curculio attracted so much attention. Spraying, which so readily controls the Codling Moth, is also being more widely practised.

Cymatophora ribearia, the CURRANT SPAN-WORM, and *Pteronus ribesii,* the Currant Saw-fly, were present in unusual numbers. The former is quite common on Montreal Island.

Sesia tipuliformis, the CURRANT BORER, is destructive locally; but controlled by careful pruning.

Oberea bimaculata, the RASPBERRY CANE-BORER, has not been so numerous this season. It is readily controlled by careful pruning.

We find an Oberea larva rather common in rose stems. It is possibly *basalis,* which has been collected from rose bushes.

The worst enemy of the raspberry, in this district, is the RED SPIDER. In dry seasons it lessens the crop very materially. Several sprayings with kerosene emulsion or fish-oil soap or frequent sprayings with water hold it in check.

There were few complaints of strawberry insects this season. Our chief insect enemy of the strawberry is the WHITE GRUB; and it is seldom destructive when the strawberries come at the end of a long rotation.

Psila rosae, the CARROT RUST FLY, was injurious at several places on Montreal Island. It also occurs at Ottawa and in Eastern Quebec, and is probably found throughout the Province.

Cabbage insects are reported in their usual numbers. The cutworms and maggots were perhaps less abundant.

ONION MAGGOTS and CUTWORMS, quite common here some years, were hardly noticed this season.

Crioceris 12-*punctata,* the 12-SPOTTED ASPARAGUS BEETLE, is rather common late in the season. *C. asparagi* is rarely seen in this neighborhood.

GRASSHOPPERS were not noticeably destructive with us this season.

INSECT MIGRATION AT AWEME, MANITOBA.

NORMAN CRIDDLE, TREESBANK, MAN.

It is common knowledge that most birds migrate, and much has been written relating to the cause and origin of their movements. But with the exception of locust flights, commonly, though erroneously, considered to be due to lack of food, and the well-known movements of the Monarch butterfly, few of us recognize that practically all insects migrate at some time of their lives. Such, however, is the case. Nor is the desire to travel confined to birds and insects. The buffalo was known to move periodically south or north according to the season. So it is to-day with the cariboo and several other mammals. We also have the autumn "flights" of spiders, which, having no wings, spin themselves aerial conveyances which carry them many miles. These are the well-known "fair-weather webs" we see floating in countless numbers during fine September and October days. In the West they are said to be a sign of fine weather, and as the spiders only spin them when it is fine there is, after all, some truth in the assertion. And as wasps were our first paper manufacturers, so spiders could probably claim to be the first animals, without wings, to master the air. There is another wingless class, however, being unable either to fly or build apparatus for the purpose, that still manages to travel in the air. These are the tramps among the smaller animals who steal rides by attaching themselves to such as can fly. As an example we have the well-known cases of water snails clinging to ducks; and many other such as leeches, and even cray fish are distributed in the same way. And this is the reason why every piece of water is stocked with the life adapted to live in it.

To return to insects: I have already related how there is a periodic movement of locusts commencing in late July and continuing well into August.* This, however, relates only to those destructive kinds belonging to the genus *Melanoplus.* There are many others that move in the same way: in fact I am convinced that all winged *Orthoptera* migrate, or in other words, fly high into the air, and taking advantage of the wind, travel long distances in search of new homes. My own eyes have shown me that *Tettix* does so: also *Hippiscus, Spharagemon, Dissosteira, Arphia* and *Scudderia,* and why have some crickets long wings unless for just such a purpose?

Among the Lepidoptera we have, as I before mentioned, the Monarchs' well-known movements south in autumn and return greatly reduced in numbers the following spring. The movements of these butterflies are most interesting. They

* Annual Report Ent. Soc. of Ont., 1911. Also Ott. Nat.

have a habit of flying before thunder storms, no matter which way the wind is blowing; but as soon as the rain commences they alight and it is then that occasionally a wonderful sight is seen. Thousands congregate upon a bush and open and shut their wings so much in unison that one moment the trees look green, the next reddish. Such a sight was seen by my brother Stuart last year in August, and I have twice observed a somewhat similar scene. No one seems to have made notes upon the migratory movements of these butterflies, though it would be well worth while to do so, and thus get an insight into the daily rate of travel. So far as first arrivals are concerned, these of course depend largely upon the weather or prevailing winds. I have two records of the first noted, June 10th, 1910, and May 16, 1911, while my latest are September 7, 1910 and September 20, 1911.

Another butterfly that migrates regularly is the painted lady, *Pyrameis cardui*. I have known them to come up from the south by hundreds with a hot southerly wind in June, while in other seasons they have been almost entirely lacking, due, at least in part, to unfavourable breezes. These are, so far as I know, the only regular migrants who go south to escape our winter and return to breed like birds, but the numbers that move from place to place as a means of distribution are almost endless. Occasionally there will be a general movement when all kinds including butterflies of several species such as *Colias, Pontia, Anosia, Pyrameis,* etc., also dragon flies, embracing several types, are all flying together as if having a single object in view. These flights, however, occur but rarely.

Moths also migrate, although as they usually fly at night their movements are overlooked, unless they appear suddenly in a district, as did the Snow-white Linden Moth at Ottawa in 1908.

Beetles nearly all have their restless moods, which occur at any time during the summer months, but their more regular movements are in spring and fall, when they appear to be returning from winter quarters or in search of them. Here also we have the day fliers and night fliers, but, strange to relate, those beetles that are generally most constant in their habits of only coming out in the sunshine will suddenly change them and appear on the darkest nights to fly long distances. Thus we have diurnal denizens such as tiger-beetles and lady-birds flying in company with hosts of other beetles, bugs, stone-flies, caddis-flies, lace-winged flies, tree-crickets, mosquitoes and many more. These have all been collected around lights. Of course some are regular night fliers, especially those commonly called water-beetles.

Presumably the reason why day beetles sometimes fly at night is the greater protection darkness affords them from birds. During the present year there was a remarkable flight of a small native beetle known as the willow leaf beetle, *Galerucella decora,* a very destructive insect. These beetles suddenly appeared in swarms soon after the trees came into leaf. Where they came from is unknown to me, though their flight seemed to be from an easterly direction. They appeared in millions, and soon turned many of the aspen poplars a dirty brown colour by skeletonizing the leaves. The willows likewise suffered, eventually more so, as they are the natural food plant. Judging from the fact that the beetles came suddenly and did not attack the intervening trees, we might suppose that they had been flying at a considerable height, especially as they seemed exceedingly hungry when they came to earth as if from a long journey. It is not an uncommon event, however, for willow leaf-beetles to migrate. Other *Chrysomelidae* do the same thing, though seldom in such large numbers.

A great many insects unquestionably fly in search of food. The potato-beetle is an example of this, and several others can readily be called to mind, but the

kind of flight I have more particularly in view is that relating to distribution rather than food supply. At such times insects seem to prepare for a more sustained flight. They also often abandon their usual habits like the tiger-beetles, flying at night.

Towards late autumn there is a continued movement in search of winter quarters, a restlessness that we might suspect to be similar to the original impulse that later turned to regular migration among certain animals. Especially as this restlessness is not confined to insects, but is noticeable in several other groups particularly among spiders, many of which, as I have already related, spin sufficient web to suspend them in the air, while others spin from stem to stem so that at times almost every plant is covered with those tiny strings, indicating the line of travel traversed by those small animals.

Among our autumn insects one is particularly noticeable on account of its abundance. I refer to *Aphodius scabriceps*. This beetle appears in late August from unknown breeding grounds, and by September, on fine sunny days, may be observed in countless millions—at times so numerous, indeed, that looking towards the sun when it is low, the whole air seems to be glistening haze, caused by the myriads of moving wings as the beetles fly to and fro. This flight goes on intermittently until frost commences to harden the ground, and at times is continued all night. What the object of it is I do not know, nor where the beetles go to, but they vanish at this time to be seen no more until the following autumn. They are also taken in Colorado, but, so far as I know, have not been seen over the intervening country. Perhaps some day they may be found breeding in the neighbourhood. Indeed, the chances are they will, but at present they are one of the little mysteries that confront the local entomologist.

Other species of *Aphodius* are also common fliers at this time, particularly *inquinatus*, but their food is known and they appear again in the spring. They are seen on all bright days, with countless other insects—winged ants, aphids, bugs, and many beetles—all seeking winter homes; and that their tastes are often similar is shown by the fact that the latter at least are constantly found huddled together as if seeking comfort, or warmth, in numbers.

Such is a summary of the flight of insects as viewed at Aweme. In addition, we have also the movements of mosquitoes, whose coming we can foretell by the direction of the wind. There are also the annual excursions of dragon flies, and occasionally the marchings of caterpillars, such as the army worm, etc. The primary reasons for these movements seem to be threefold. Firstly, distribution: the instinctive desire common to all creation to spread over and occupy as large an area as possible. Secondly, food supply: the scarcity of food in a given locality making it necesary for them to go elsewhere in search of it; and thirdly: sexual advantages. It is well known that nearly all life derives a benefit from the union of well separated individuals, and is injured in vitality by in-breeding. Consequently, the movements of insects to seek their mates elsewhere is of decided benefit to the race as a whole.

Note.—Since writing the above the mystery of *Aphodius scabriceps* has been partly cleared up. The mature insects have been found emerging and burrowing into ploughed fields in considerable numbers, while odd individuals were discovered in a partly decomposed tomato. There is, therefore, every reason to suspect that these beetles feed upon the decayed vegetation covered over by the plow. If this is so, they may be of decided benefit to agriculture.

CATALOGUE OF CANADIAN INSECTS.

C. Gordon Hewitt, D.Sc., Dominion Entomologist, Ottawa.

It is well known to all the members present how the idea of a catalogue of the insects of Canada originated and the reason for its genesis, and I have attempted in a recent number of the *Canadian Entomologist,* which I have no doubt most of the members have read, to give some idea of the agreement to which the committee which was formed came to with regard to the scope of this catalogue. My object, therefore, in speaking on the subject this afternoon is not to discuss what has already been accomplished, as that is set forth in the short article mentioned, but to discuss any points which members of the society or those who are assisting in the preparation of this catalogue, wish to discuss. I am very pleased to tell you, as you may have seen from the short note at the end of the article, that I took up the question of publication with the Geological Survey and Mr. Brock also took it up with the Minister, with the result that they have consented to publish the list in parts as we desire. I think the best thing we can do now, and which I had intended, is to publish the different groups as they are ready. For example, some groups such as the Noctuidæ would form a fairly large volume, I suppose, so that such a group would be published in a single volume. On the other hand, a number of the groups and families are quite small and they will not be published separately; they will be held over until all the sub-families are prepared, and then the family will be published in a complete manner.

There is one question which I wanted to discuss with you and that is the question of nomenclature. It is extremely desirable and it is necessary that we have some uniformity in this matter, that we should act thoroughly in accordance with the modern rules and usages of nomenclature. There is a small matter on which there should be some consensus of opinion, and that is as to the use of initial capital letters in specific names. Take the Larch Sawfly, for example, which is

Lygaeonematus erichsonii.

The old naturalists and still many of those who are accustomed to use these proper names, write the specific name *erichsonii* with a capital E, and we should decide whether in such cases a capital or a small letter is to be used.

With a view to obtaining the official opinion I wrote to Dr. Stiles, who is Secretary of the International Commission on Zoological Nomenclature, which decides all questions of nomenclature, and he replied as follows:—

Washington, D.C.,
October 9th, 1911.

Dr. C. Gordon Hewitt,
Dominion Entomologist,
Ottawa, Ont.

Dear Doctor,

Replying to your letter of October 3rd, I would say that Article 13 of the International Code on Zoological Nomenclature, reads as follows:—

"While specific substantive names derived from names of persons may be written with a capital letter, all other specific names are to be written with a small initial letter. Examples: *Rhizostoma Cuvieri*, or *R. cuvieri; Francolinus Lucani*, or *F. lucani; Hypoderma Diana*, or *H. diana; Laophonte Mohammed*, or *L. mohammed; Oestrus ovis; Corvus corax.*"

Under "Discussion" of Article 13 is the following paragraph:—

"Formerly all substantive specific names were capitalized, while most adjectival names were written with a small initial letter. Then the custom relative to specific names changed to confining the capital to names derived from proper names. Later,

the capitals were restricted to names derived from names of persons, and, finally, the use of capitals in specific names was entirely rejected, except that names derived from names of persons *may* be written with a capital. The use of the capital is a convenience in distinguishing between a specific name, like *Gobii*, based upon the surname *Gobi*, and a specific name, like *gobii*, based upon the generic name *Gobius*. There is now a decided tendency to reject the use of capitals in specific names."

Very respectfully,

(Signed) C. W. STILES,
Secretary, International Commission on Zoological Nomenclature.

I think, therefore, in view of that we shall be justified in our decision not to use capital letters in the case of specific names, but adopt the method which is most generally employed and use the small letter.

There are a number of other points, too, but I would rather the members of the Society would ask them in the form of questions.

MR. CAESAR: I suppose every specimen will be supposed to have the date and locality as far as possible?

DR. HEWITT: We shall not record any species of insect in any of the collections which does not possess a locality label.

MR. CAESAR: How about dates?

DR. HEWITT: Dates are desirable. In the case of the commoner insects we shall not include dates. In the various collections we shall find a large number of insects which do not possess locality labels and I do not think it would be advisable to include these species in this list.

DR. BETHUNE: There is another point. I notice in some publications that after the specific name and before the author's the comma is omitted. If the scientific name is in italics the author's name is in Roman letters; of course you see at once the difference. But where they are all in the same type it looks to me as if it might be part of the specific name, so that I think there ought to be some decision in regard to that.

DR. HEWITT: That is a point which I have also had under consideration and I agree with you that there should be some distinction, but as I think the author's name really forms part of the insect's name—although I should like to have the opinion of the Committee—the omission of the comma and the printing the author's name in Roman letters might be preferable.

DR. WALKER: The scientific name is written, almost always, in italics, or black-faced type, and I think it always should be, and in the catalogue certainly it would look very badly if the scientific names were not distinct.

DR. WALKER: One point which I should like to know is whether we should include in the references the original description as well as a reference to some good description. I think it was agreed in the original plan not to include the original description, but only a reference to some well known and easily accessible good description. It seems to me that it would be highly desirable to have references to the original descriptions.

DR. HEWITT: I agree with that idea, but at the same time, in addition to giving a good general description of the insect and its life-history you should give a good specific description. Accordingly we might have three references. There would be the reference to the original description, the second to a good specific description, if the original description were considered inadequate, and a third description giving, if possible, the life-history and the habits of the insect.

MR. WINN: I have been practically through all the original Geometrid descriptions, and the original descriptions are very short, rarely half a page; the

life-history takes sometimes as much as a page and a half. We might indicate the latter by some kind of initials.

Dr. Hewitt: In many cases it is indicated by using heavier type. I am glad you have mentioned that. I believe it would be a good thing to indicate the good general description of the insect. It might be indicated by the use of the abbreviation (Biol.) or (L.H.) The former would be preferable.

Prof. Swaine: Is each section of an order to be described as the work of one man? If there are four men responsible for the order, would it be convenient for all four to work in unison, or in the Catalogue will each one of them be credited with doing a certain amount?

Dr. Hewitt: In case four men are responsible for the Noctuidæ (I take this for an example) and all are working at that group, it will be published under the four men's names. But should four men take four separate divisions of a single order, they would be each responsible for the division apportioned and the divisions would be published under their respective names.

Prof Swaine: Would it be desirable to have the method of preparation in the Diptera as in the Coleoptera?

Dr. Hewitt: Yes, I think so. I am endeavoring to leave the preparation and apportioning of the work of the orders to certain sub-committees and it is for them to arrange who should take the separate sections. In the Coleoptera you might arrange that each of you would work at the whole order and then the four would be responsible for the order.

Dr. Hewitt. I think it would be advisable to append the account of the preparation of the list to our discussion. Before closing the discussion I may say that we are under a great obligation to a number of our scientific friends in the United States. who are assisting us in the preparation of the catalogue. Dr. Wheeler has promised to be responsible for the Ants, Professor Cockerell for the Bees and Dr. MacGillivray is cataloging the Sawflies. In addition other entomologists are lending valuable assistance, which we deeply appreciate, in the submitting of records and lists, etc.

THE PREPARATION OF A CATALOGUE OF THE INSECTS OF CANADA.

C. Gordon Hewitt, D.Sc. Dominion Entomologist, Ottawa.

(From "The Canadian Entomologist," vol. xliii., p. 3-5.)

At a meeting of the Executive Committee of the Entomological Society of Ontario, held at Guelph, Ont., on November 4th, 1910, it was unanimously agreed that the preparation of a catalogue of Canadian insects was desirable, and that such a list should be dedicated to Dr. C. J. S. Bethune. in recognition of his long and valuable services to Canadian entomology as editor of *The Canadian Entomologist.* A special committee of the society was appointed to arrange for and take charge of the work of preparing the proposed catalogue.

The following members constitute the committee: Dr. E. M. Walker (Pres.), Dr. C. Gordon Hewitt (Vice-Pres.), Messrs. G. Chagnon, N. Criddle, J. D. Evans, Arthur Gibson, W. H. Harrington, T. D. Jarvis, H. H. Lyman, G. A. Moore, G. E. Sanders, J. M. Swaine, A. F. Winn, F. H. Wolley-Dod, and Prof. T. D. A. Cockerell.

Suggestions as to the form and scope of the catalogue, and the method of preparation, were drawn up and submitted to the members in a circular, issued on March 10th, 1911, with a request that it should be considered, and that further suggestions should be submitted.

Opinions on the suggestions which were submitted and further suggestions on the part of members of the committee have resulted in the formation of the following scheme, which will be adopted in the preparation of the catalogue, as they represent the views of a majority of the members.

1. The list will be entitled, "A Catalogue of the Insects of Canada and Newfoundland," and it will include all species known to occur in Canada (including Labrador) and Newfoundland, whether previously recorded or not. Alaskan species will not be included, but may be published as an appendix.

2. The various species will be classified under the orders, sub-orders, families, sub-families, and genera, in ascending order wherever possible. The arrangement of the genera will be systematic and, so far as is possible, the species also.

3. The names will be given of the authors of all generic and specific names mentioned, with the date (year) in the case of each genus.

4. Under each species will be given:

(*a*) A reference to one or two good descriptions of the insect, not necessarily the original one; these will be descriptions which are as accessible as possible. If possible reference will be given to a good published figure, and if such is contained in one of the references it will be indicated by the addition of (fig.) after the reference.

(*b*) The geographical distribution within Canada and Newfoundland; this will be indicated, as a rule, by Provinces, in order from East to West, e. g., N. S., Ont., B. C., etc. The characteristic faunal zones inhabited by the species will be indicated, so far as it may be possible, by abbreviations; thus: Ar.—Arctic, H.—Hudsonian, C.—Canadian, T.—Transition. Where a species is known from a few localities only, the names of these will be given with the name of the captor in cases where the species recorded is of great rarity.

(*c*) If the type locality of a species is Canadian it will be given, and the places where type specimens of Canadian species are deposited will also be given when possible.

(*d*) The Latin name of the chief food plants will be given in the case of the Lepidoptera, Cecidomyidæ, Aphidæ, Coccidæ, phytophagous Hymenoptera and Coleoptera. (Gray's New Manual of Botany, 1908, will be used throughout for the names of the food plants).

(*e*) In the case of parasitic species the name of the host or chief hosts will be given wherever known.

5. Recent important changes in synonymy will be noticed.

6. In the case of new and previously unpublished records the collector's name will be given in every case.

7. No species of which there is no trustworthy record or specimen available is to be included.

8. Fossil species will be included, and also introduced species, including greenhouse species, but the fact that they have been introduced will be indicated in those cases in which the fact is known.

The work of preparing the catalogue will be divided among the members, approximately, as follows:

Aptera, Orthoptera and Neuropteroid Orders.—Dr. E. M. Walker.

Hymenoptera.—Messrs. W. H. Harrington, G. E. Sanders, and Prof. T. D. A. Cockerell.

Coleoptera.—Messrs. J. M. Swaine, G. Chagnon, N. Criddle, and J. D. Evans.

Lepidoptera.—Messrs. Arthur Gibson, H. H. Lyman, A. F. Winn, and F. H. Wolley-Dod.

Diptera and Aphaniptera.—Mr. C. Gordon Hewitt.

Hemiptera.—Prof. T. D. Jarvis, and Mr. G. A. Moore.

These members will be responsible for the lists prepared by them, and such lists will be published under their names. In the preparation of such lists it will be necessary to seek the co-operation and assistance of other specialists and all such assistance will be fully acknowledged.

The division of the work in the different orders will be systematic rather than according to the geographical regions in which the members may be located; this will necessitate the co-operation of workers in different regions.

In the compilation of the catalogue it is intended to index the species on the regular card, catalogue cards 5 in. x 3 in., which will be supplied to the members. A single species will be listed on each card. The card will thus contain the information which it is intended to include in the catalogue. For example, the Spruce Budworm, *Tortrix fumiferana* Clemens, would be indexed and listed as follows:

T. fumiferana Clemens.

Proc. Ent. Soc., Phila., v 139, 1865.

U. S. Ent. Comm., 5th Rep., pp. 830-838 (Packard), 1890.

Dist.: Eastern Can., Man., B. C.

Food Plants: Abies, Picea, Pseudotsuga

The catalogue will be published, under the editorship of the writer, by the Geological Survey of Canada, by arrangement with and the consent of the Minister of Mines and the Director of the Survey. It will appear in parts as the different orders, or families, in the case of large families, are completed, and its publication will necessarily extend over a number of years.

SOME NOTES ON HEPIALUS HYPERBOREUS.

Horace Dawson, Hymers, P. Q.

This season I have had splendid opportunities for watching these interesting moths as not only have they been breeding all around me but some have actually emerged from under my new house and some were taken inside, on windows, etc. A freshly emerged female found clinging to a screen door trying to attract a mate held on so tightly that the opening and closing of the door quite hard several times did not disturb her. I also found, within three feet of the house, two females, just emerged, the wings being not fully expanded, and give the following notes on them:

Aug. 19th. Two fresh females found, and a glance revealed an empty but evidently freshly vacated pupa-case. A further search resulted in a large number of others being found, mostly older ones. Some were lying flat on the ground, but the greater number were projecting about one-half of their length from perpendicular silk tubes that came almost, if not quite, to the surface of the leaf mould which covered the ground to the depth of several inches. The moths were caged and remained

perfectly quiet until about 7.30 p.m., when they began their endeavours to attract the males. The fore-wings were moved very rapidly, the vibrations producing a slight hammering sound; the hind-wings are held close to the body, and motionless. Many others noticed drumming behaved in exactly the same manner. Six males were taken at the cage; others were seen, but escaped.

Aug. 20.—Trapped one male, which was admitted to the cage, and soon mated, and eggs were dropped during the night. Several other males were attracted.

Aug. 21.—Two or three males were attracted, but I was unable to trap one; the night was windy.

Aug. 22.—None attracted, one seen on the wing; night cold.

Aug. 23.—Another fresh female was secured and put in the same cage and the door opened at 7.30. A male was attracted and mated; the other did not attract.

Aug. 24.—A fresh male was netted, and on being put in the cage soon mated with the old but hitherto unpaired female, and eggs were dropped the same night.

Aug. 25.—A few more eggs dropped.

Aug. 26.—The female died this morning.

A good way to take the species is to watch for the flight about 7 p.m., and as soon as dark enough take a lantern and search for them. They are then found in pairs, clinging to grass and other low plants usually some six or eight inches from the ground, or clinging to the side of the house. The time of flight varies, probably being a little earlier on a clear than a cloudy evening, but they are seldom on the wing before seven o'clock, and almost never after eight o'clock.

BLISTER BEETLES.

ARTHUR GIBSON, CHIEF ASSISTANT ENTOMOLOGIST, CENTRAL EXPERIMENTAL FARM, OTTAWA.

In the Family Meloidæ there are several beetles, known popularly as Blister Beetles, some of which almost every year in Canada cause considerable anxiety to farmers and gardeners, from their habit of appearing suddenly and often much reducing the crop which they happen to attack. These blister beetles differ much in size and appearance, but all are soft-bodied insects, and in shape slender and cylindrical. Being gregarious in habit, they congregate in great numbers, and when they appear suddenly and attack a crop, the plants are often entirely ruined in two or three days. Fortunately, however, they oftentimes disappear from a locality as suddenly as they came.

As is well-known, blister beetles derived their popular name from their possessing powerful vesicating properties. Many cantharids have this property, but the species which has been used most extensively in medicine is the Spanish Beetle (*Cantharis vesicatoria*). Our common North American species, the Striped Blister Beetle (*Epicauta vittata*) has been found to be fully equal to the Spanish Beetle as a vesicant.

In their life-history, blister beetles differ remarkably from other coleoptera. Chittenden, in the United States Department of Agriculture Year Book, 1898, states:

"The blister beetle eggs are laid on plants or upon the ground. From each hatches a small long-legged larva, called a 'triungulin,' which runs actively about in search of a grasshopper egg-pod, which it enters and feeds upon. After a time it casts its skin and assumes what is called the 'carabidoid' larval stage, and when it next moults it resembles a white grub, 'the scarabæidoid' larval stage. When a larva has finished its quota of locusts' eggs, it undergoes a third moult and forms within its own skin what is known as the 'coarctate' larval stage or 'pseudopupa,' and in this condition usually passes the winter. In the spring the fourth and ultimate larval moult takes place, and with the fifth moult the insect enters upon the true pupal stage, and in due time transforms to a beetle."

The BLACK BLISTER BEETLE (*Epicauta pennsylvanica*. DeG.) (Fig. 1, on plate). This species is the one which, in Canada, has been most complained of. It occurs particularly in Ontario and the Eastern Provinces, but instances are on record of its appearing in destructive numbers in Manitoba, Saskatchewan and British Columbia. In colour, as its popular name implies, it is uniformly dull black, and in length varies from a little more than a quarter to slightly more than half an inch. This beetle has a very wide range of food plants. It is particularly destructive to the potato, and is mostly complained of as a pest of that plant. Mangels, beets, carrots, cabbages, tomatoes, corn and windsor beans are also freely attacked, and even such plants as mustard, asters, clematis, zinnia and other garden plants. Prof. E. W. Claypole has recorded the species as "devouring the flowers of the Great Rag-weed (*Ambrosia trifida*)." The species commonly occurs in August on the leaves and blossoms of golden rod and thoroughwort, and has also been found on amaranth and ironweed. At Ottawa, we have found the beetles defoliating clema-

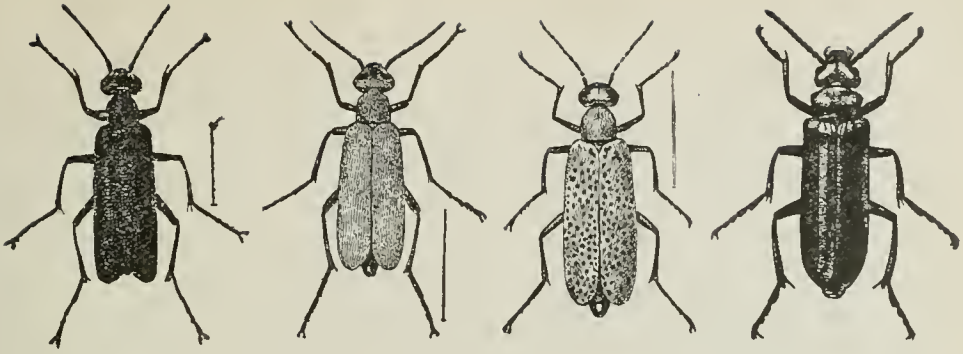
tis and plants of the genus *Thalictrum*, the latter growing in the perennial border at the Central Experimental Farm. At Aweme, Man., Mr. Norman Criddle finds the species wherever the Wild Pea (*Lathyrus venosus*) is plentiful. The beetles may be found in Ontario any time from the latter part of June to the end of September.

The Ash-gray Blister Beetle (*Macrobasis unicolor*, Kirby). (Fig. 6, on plate). This also is an abundant species, particularly in the east. It is larger than the Black Blister Beetle and in colour is of a uniform ash-gray. In size it varies from slightly less than half an inch to five-eighths of an inch. In New Brunswick the beetles have been very numerous during the month of July, eating the leaves of horse beans. In Quebec, the insect has attacked potatoes and beans. In Ontario the chief injury has also been to potatoes and beans. Other plants are often attacked by these beetles, such as peas, beets, tomato, sweet potato, clover, basswood, honey locust, lupine, astragalus, wild indigo, anemone, chrysanthemum, caragana, aralia, clematis, ironweed and thalictrum. At Ottawa the beetles have been frequently found upon the Tall Meadow Rue (*Thalictrum cornuti*). In the district we have found the adults from the beginning of the last week of June to the first week of August.

The Western Blister Beetle (Fig. 4, on plate), or, as it is also called, Nuttall's Blister Beetle (*Cantharis nuttalti*, Say), occurs throughout the west and is some years decidedly destructive to leguminous crops, particularly windsor broad beans. It is a handsome species and in length is from three-quarters to one inch. The wing-covers are variable in colour, some being purple, others greenish or of a coppery appearance. The head, thorax and body are metallic green, with a golden sheen. The time of the appearance of this blister beetle in destructive numbers varies considerably. During the past season the beetles appeared in large numbers in Saskatchewan from about the 25th July till the middle of August. Other years they appeared in swarms about July 1st and in 1893 at Saskatoon, Sask., they occurred as early as June 19th. Besides beans, the beetles have been found injuring young oats, barley, cultivated tares and leguminous wild plants such as *Vicia americana* and the astragali or milk vetches.

The Gray Blister Beetle (*Epicauta cinerea* Forst) (Fig. 2, on plate), has some years been destructive in Ontario and Quebec to potatoes, beans, vetch and alfalfa. It is also recorded as destructive to honey locust and even to the foliage of apple and the young fruit. It does not, however, occur nearly so destructively in Canada as some of the other species. In colour it is black, uniformly clothed with grey pubescence, and is from about three-eighths to five-eighths of an inch in length. The beetles occur in July and August.

The Margined Blister Beetle (*Epicauta marginata* Fab.). (Fig. 8, on plate.) The only Canadian specimens I have seen of this species are three which were taken at London, Ont., and which are in the collection of the Entomological Society of Ontario. This insect is very abundant in the United States and is recorded as being particularly partial to beets. It appears in July and August, and besides beets is known to have attacked beans, potatoes, tomatoes, asters, clematis, etc. In colour it is black, the head and sides of the thorax being clothed with gray pubescence, as are also the margins of the wing-covers. When at rest the inner gray borders of the wing-covers appear as a band down the centre of the back.



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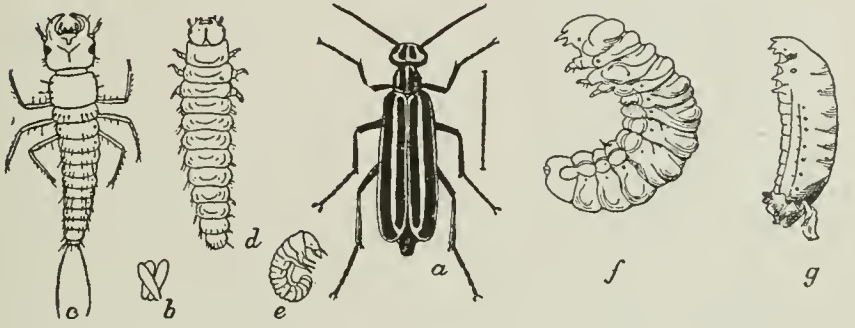

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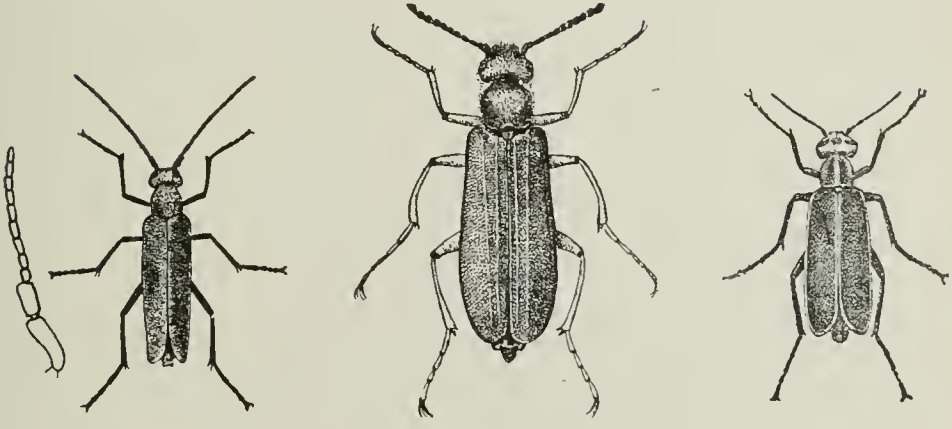

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BLISTER BEETLES

1—Black Blister Beetle.
2—Gray Blister Beetle.
3—Spotted Blister Beetle.
4—Nuttall's Blister Beetle.
5—Striped Blister Beetle.
6—Ash-gray Blister Beetle.
7—Say's Blister Beetle.
8—Margined Blister Beetle.

(Figs. 1, 2, 3, 4, 5, 6, 8, after Chittenden, Bull. No. 43, Div. of Ent., U. S. Dept. Agr.)
(Fig. 7 after Chittenden, Bull. No. 38, N. S., Div. of Ent., U. S. Dept. Agr.)

The Striped Blister Beetle (*Epicauta vittata* Fab.). (Fig. 5, on plate.) This species, which is about half an inch in length with blackish wing-covers, each of which is bordered with yellow and has a yellow stripe down the centre, has not as yet been complained of as a serious pest in Canada. In 1901, it was reported as injuring potatoes, tomatoes, mangels and beets in a few places in western Ontario, during the last week of July and the first week of August. Provancher records the species from St. Hyacinthe, Que. In the United States this beetle has long been known, particularly in the eastern States, as one of the most destructive pests of the potato. Besides the above-mentioned crops it has also been found doing injury to turnips, beans, peas, radishes, melons, corn, clover and alfalfa.

The Spotted Blister Beetle (*Epicauta maculata* Say.). (Fig. 3, on plate.) In British Columbia and some of the other western provinces this blister beetle has been frequently complained of. In colour it is gray, or rather the black body is covered with fine gray hairs, excepting small areas on the wing covers which show up as black spots. The beetles appear any time from about the middle of May till the middle of August. Injury by this species has been done particularly to potatoes, but it has also done considerable damage to beets, cabbages, spinach, beans and clover. It is also known to feed in Montana upon the Grease-wood, *Sarcobatus vermiculatus*.

Say's Blister Beetle (*Pomphopoea sayi* Lec.) (Fig. 7, on plate.) This species has not yet been recorded as an important pest in Canada. It, unlike the above-mentioned species, is arboreal, feeding on the blossoms of certain trees. At Toronto, Mr. C. W. Nash has reported that the beetles did considerable damage to the blossoms of plum, in May. During the past season the adults were present in some numbers on June 4th at Hull, Que., where Mr. W. Metcalfe found them feeding on the blossoms of elder. Mr. F. J. A. Morris collected the species on July 1st, in Muskoka, Ont., upon Nannyberry (*Viburnum lentago*). Mr. J. D. Evans has taken the beetles at Sudbury, Ont., on May 14th, Mr. A. W. Hanham has found the species at Quebec, Que., and Mr. A. F. Winn has collected the beetle at Shawbridge, Que., on June 4th. Mr. Winn informs me that he has also found specimens at other points in the Laurentian Mountain district, in the blossoms of cherry, plum, etc. This is a handsome species measuring about seven-eighths of an inch in length. In colour it is of a dark metallic blue, the first two joints of the legs being reddish-yellow.

The Green Blister Beetle, *Cantharis cyanipennis* Say. Few instances are on record of this species occurring in destructive numbers in Canada. In 1900 the beetles were found injuring pea vines in an orchard at Ducks, B.C., and in 1904 specimens were sent to the Division with the statement that they were destroying beans and peas. No further record of injury by them has since been received. "At several places in Western Assiniboia and Southern Alberta", the beetles have been found by Fletcher feeding on the wild American vetch. This species is a large one, some individuals being three-quarters of an inch in length; in colour it varies from an intense green to almost a deep blue with metallic reflections.

Other species of cantharids which occur in Canada but which so far have not appeared in injurious numbers, are the following:

EPICAUTA SERICANS Lec. This species, some years, occurs in large numbers in Manitoba. Mr. N. Criddle states that at Aweme, Man., where it is present on the dry prairies, that it is in no way injurious, but that, on the contrary, it is beneficial, as it seems to confine itself almost entirely to lambs' quarters. The native food plant is apparently the Crocus Anemone, *Anemone nuttalliana,* on which Mr. Criddle has frequently found the adults feeding. This is a small grayish species about three-eighths of an inch in length.

EPICAUTA PUNCTICOLLIS Mann. In British Columbia this species is sometimes fairly abundant. Rev. G. W. Taylor has found the beetles on Vancouver Island, and Mr. A. J. Hill has collected specimens at New Westminster.

EPICAUTA FISSILABUS Lec. This species has been collected on June 6, at Saskatoon, Sask., by Mr. T. N. Willing.

EPICAUTA TRICHUS Pall. Mr. Norman Criddle has collected this species at Aweme, Man., (June 19, 21).

CANTHARIS VIRIDANA Lec. Fletcher has taken this species at Aweme, Man., in the middle of July, at Rudy, Sask., in the same month, and also at Medicine Hat, Alta., on June 20th. This species measures about half an inch in length. It is of a green or bluish-green colour, the head and thorax having a metallic coppery reflection.

CANTHARIS SPHÆRICOLLIS Say. This blister beetle is some years rather abundant in British Columbia. We have had it sent in, in fair numbers, from near Kamloops, B.C. (July 31), and also from Vernon, B.C. It is greenish-blue in colour and in length about half an inch.

CANTHARIS COOPERI Lec. A series of this beetle was sent to the Division some years ago, from Indian Head, Sask. It is very distinct from any of the above species, the wing covers being black and the head and thorax reddish-yellow.

REMEDIES.

In the older provinces, where potatoes are so largely grown, little injury from the attacks of blister beetles should result if the vines are sprayed regularly with the ordinary poisoned Bordeaux mixture* so widely used for fungi and leaf-eating insects. In the western provinces, however, where fortunately the Colorado Potato Beetle does not yet occur in very destructive numbers, no regular treatment of potato fields is practised, and consequently when these beetles appear suddenly in large swarms, the damage is done, in many instances before the farmer knows that the insects are upon his crop. As is well known, blister beetles, in their larval state,

* Bordeaux mixture is made as follows:—

Copper sulphate (blue-stone)	4 lbs.
Lime (fresh)	4 lbs.
Paris green	4 oz
Water (1 barrel)	40 gallons

Dissolve the copper sulphate (by suspending it inside a wooden or earthen vessel containing 4 or 5 or more gallons of water). Slake the lime in another vessel. If the lime, when slaked is lumpy or granular, it should be strained through coarse sacking or a fine sieve. Pour the copper sulphate solution into a barrel, or it may be dissolved in this in the first place; half fill the barrel with water, add the slaked lime, fill the barrel with water and stir thoroughly. It is then ready for use.

A stock solution of copper sulphate and milk of lime may be prepared and kept in separate covered barrels throughout the spraying season. The quantities of copper sulphate, lime and water should be carefully noted.

are predaceous on the eggs of grasshoppers. It is well, therefore that the farmer should realize this and watch for the appearance of blister beetles in years following excessive outbreaks of grasshoppers. Whenever these latter insects appear in destructive numbeers, the now well-known Criddle mixture† should be applied. This has given excellent results particularly in Manitoba and the west. When the grasshoppers are destroyed in this manner, the chances are, of course, that blister beetles will not be present in numbers to do very serious damage the following year. When spraying crops with an arsenical mixture for the destruction of blister beetles it is important that the mixture be applied immediately their presence is detected, on account of the voracious habits of these insects. Paris green, the insecticide which has been mostly used, can be applied either as a spray, using one ounce to every ten gallons of water, to which has been added an equal quantity of freshly-slaked lime, or as a dry application mixed with from 10 to 20 parts of flour, land plaster or slaked lime. Plants with such coarse foliage as the potato will stand double the above strengths of Paris green. In some outbreaks it may be necessary to repeat the application, as the beetles which are killed are soon replaced by others.

Blister beetles are very easily disturbed and for this reason a remedy which has often been very successfully employed is for two or three boys, or more if necessary, to walk through an infested field and wave from side to side boughs of spruce, or other branches. Such an operation will drive the beetles ahead of them and when the insects come to the edge of the crop they will disperse and seldom return. This method has given excellent results in outbreaks of the Western Blister Beetle. This latter species is particularly ravenous and is capable of destroying a crop in a very short time, even in a day according to some reports. In such instances, of course, spraying would be of little avail. In the United States the beetles are often driven in the above manner into a windrow of hay or straw which is immediately set on fire, and thousands of the insects are thus destroyed.

In gardens many of these beetles may be killed by beating them from the plants into pans containing water with a little coal oil on the surface. If any of the species which feed on the blossoms of fruit or other trees should occur in injurious numbers, many no doubt could be jarred from the trees into an inverted umbrella, or other contrivance, and then put into a vessel containing coal oil and water.

On account of the good habits of the larvæ of blister beetles in feeding upon the eggs of grasshoppers, it is often undesirable to destroy them, but, of course, when they occur in destructive numbers, it is well that one of the above measures be taken as soon as possible for the protection of the crop.

†The Criddle mixture is made by mixing one pound of Paris green with five ordinary pailfuls of horse droppings, which have been moistened with about half a pailful of water in which two pounds of salt has been dissolved. It is simply scattered among the crop which is being attacked, or along the edge of a crop towards which the young grasshoppers are working.

THE ENTOMOLOGICAL RECORD, 1911.

Arthur Gibson, Chief Assistant Entomologist, C. E. F., Ottawa.

In *The Entomological Record*, which has been published every year since 1901, students of the several orders of insects have, in a readily accessible form, considerable information on the distribution, etc., of many species occurring in Canada. This information will be of special value now in view of the List of the Insects of Canada and Newfoundland which is being prepared by members of our Society. In the *Record* for this year I have endeavoured to include all references to new species described from Canada in 1911, in the literature to which I have had access.

The season of 1911 in Canada was a favourable one for the collection of insects. Although some collectors have reported the season to have been a poor one in their particular districts, on the whole, I judge that in most localities much material was present, and large collections were made by some students. During the night of June 28th, 470 moths were caught in a lantern trap at Trenton, Ont. This number represented many different species, and Mr. J. D. Evans informed me that he never had such success before. Large catches were made on many other nights.

We have again to gratefully acknowledge the invaluable help received from recognized authorities in the United States and elsewhere. Particular acknowledgment is due to Dr. L. O. Howard and his expert associates, Dr. Dyar, Dr. Banks, Messrs. Busck, Viereck, Rohwer, and Crawford; Dr. J. B. Smith, of New Brunswick, N. J.; Sir George Hampson, of the British Museum; Mr. W. D. Kearfott, of Montclair, N. J.; Prof. H. F. Wickham, of Iowa City, Iowa; Mr. E. P. Van Duzee, of Buffalo, N.Y.; Mr. W. Beutenmuller and Mr. J. A. Grossbeck, of New York, N.Y.; Dr. Henry Skinner, of Philadelphia, Pa., Dr. E. M. Walker, of Toronto, Ont.; Col. Thos. L. Casey, of Washington, D.C.; Mr. Chas. Liebeck, of Philadelphia, Pa.; Mr. J. D. Evans, of Trenton, Ont.; Mr. F. H. Wolley-Dod, of Millarville, Alta., and Prof. Cockerell, of Boulder, Col.

Literature.

Among the many valuable publications which have been received during the past year, and which are of interest to Canadian students, mention may be made of the following:—

Beutenmuller, Wm. The North American species of Dryophanta and their Galls: American Museum of Natural History, New York, separates issued December 30, 1911. This paper is the tenth instalment of a series of articles on North American Cynipidæ and their galls. Six beautiful plates accompany the article, five of which are from the drawings of Mrs. Beutenmuller.

Casey, Thos. L. Memoirs on the Coleoptera, II; New Era Printing Co., Lancaster, Pa.; issued Aug. 15, 1911. In 1910, we were glad to receive Memoir No. 1, and now Memoir No. 2 has recently appeared. This latter is a larger contribution than Memoir 1, being of 259 pages. It also is divided into 2 parts, viz.—I. New American Species of Aleocharinæ and Myllaeninæ; II. Notes on the Coccinellidæ with some General Remarks and Synonymy. Of the 397 species described as new, in part I., 50 are from Canada; 36 of these are from British Columbia, (mostly collected by Rev. J. H. Keen); 10 from Manitoba, (N. Criddle), and 4 from Ontario, 3 of which were collected at Ottawa, (W. H. Harrington).

Gahan, A. B. Aphidiinæ of North America: Bulletin No. 152, Maryland Agricultural Experiment Station, College Park, Md., March 11, 1911, pp. 147-200. The study of parasitic insects is every year becoming more important and such results as are published in the above Bulletin are extremely useful. The author treats of 48 species of this subfamily of the Braconidæ. Five new species are described and in order to point out characters, correct errors in former descriptions, obviate the confusion in certain cases resulting from the numerous descriptions of the same species under different names, as well as to bring the descriptions all together in a convenient form for reference, a redescription is included of all the established species of which authentic specimens could be obtained. Eight species are stated to occur in Canada.

Hampson, Sir George F. (Bart.). Catalogue of the Lepidoptera Phalænæ in the British Museum, Vol. X, Noctuidæ, 1910, 829 pp., plates CXLVIII—CLXXIII; volume received 27th January, 1911, plates received 7th June, 1911. In this large volume 1,222 species belonging to 136 genera of the subfamily Erastrianæ, are classified. "The subfamily is homogeneous in appearance but is not very well defined structurally, being intermediate in characters between the Trifid and Quadrifid sections of the Noctuidæ, and having very close affinities on the one hand with the Acronyctinæ, and on the other hand with the Acontianæ, Noctuinæ, and Hypeninæ." The moths of the subfamily Erastrianæ are confined, to a large extent, to the tropical and warmer temperate regions. Records of only sixteen species which occur in Canada are given, but in the volume are several other species which are to be found within the Dominion. The beautiful plates which accompany this volume are of the usual high character.

Hopkins, A. D. Contributions Toward a Monograph of the Bark-weevils of the genus Pissodes; U. S. Dept. Agric., Bureau of Entomology, Technical Series, No. 20, Part I; issued January 7, 1911. This further contribution to our knowledge of forest insects is very welcome. These bark-weevils are important enemies of pine, spruce, and fir trees, and such information as is given in this part is of much economic value. The results of the anatomical studies, as given in detail, are of much interest. Thirty species are recognized from North America; twenty-three of these are described as new, six of which are from Canada.

Moulton, Dudley. Synopsis, Catalogue and Bibliography of North American Thysanoptera, with descriptions of new Species; Technical Series No. 21, U. S. Dept. of Agriculture, Bureau of Entomology, pp. 56; issued June 13, 1911. This synopsis and catalogue of the Thysanoptera will be found of much value to students of these insects; 118 species are listed, 10 of which are described as new. Six full page plates appear in the Bulletin.

Skinner, Henry. The Larger Boreal American Hesperidæ, including Eudamus, Erycides, Pyrrhopyge, and Megathymus. Reprint from Transactions of the American Entomological Society; Vol. XXXVII, No. 3, issued August 18, 1911; pp. 169-209, with one colour plate. This most useful paper will be much consulted by students of diurnal lepidoptera. The original description of each species is given, together with notes on distribution, etc., and where known, the food plants of the larvæ, descriptions of caterpillar and chrysalis, together with critical notes which will help the student to determine the species. Canadian records are included of three of the species. An interesting note at the end of the paper is that referring to *Eudamus electra* Lint., which was described from a specimen collected at Hamilton, Ont. It now seems as if this specimen of *electra* is the male of

Ephyriades zephodes, which has also been placed in the genus *Nisoniades.* The plate in colours accompanying the paper is an exceptionally good one. We hope to see many more such contributions from this well-known authority.

THEOBALD, F. V. A Monograph of the Culicidæ, or Mosquitoes, Vol. V; British Museum, 1910; received Feb. 24, 1911; pp. 646; plates I to VI. Since the previous volume was published, 392 species have been described, or old descriptions found. Of these the author is responsible for 106, 80 of which are described in this volume. Synoptic tables of the genera and the species in each genus in the Anophelinæ, Megarhininæ, Culicinæ, Heptaphlebomyinæ and Uranotaeninæ have been worked out. Numerous text figures occur throughout the volume.

WHEELER, W. M. A List of the Type Species of the Genera and Subgenera of Formicidæ; Annals of the New York Academy of Sciences, Vol. xxi. pp. 157-175; separates dated 17th October, 1911. This contribution from such a high authority will be most welcome to students of the Formicidæ. The list includes the genera and the subgenera, both living and fossil, up till June, 1911.

The following is a list of the names and addresses of collectors heard from during 1911:—

Anderson, E. M., Provincial Museum, Victoria, B.C.
Baird, Thomas, High River, Alta.
Baldwin, J. W., 74 Besserer Street, Ottawa.
Beaulieu, G., Experimental Farm, Ottawa.
Beaulne, J. I., Experimental Farm, Ottawa.
Bethune, Rev. Prof., O. A. C., Guelph.
Bolton, A. R. M., Quebec, Que.
Brittain, W., Seed Branch, Dept. of Agr., Ottawa.
Bush, A. H., 1105 Ninth Ave., Vancouver, B.C.
Carr, F. S., Edmonton, Alta.
Chagnon, Gus., Box 521, Montreal.
Chagnon, W., St. John's, Que.
Cockle, J. W., Kaslo, B.C.
Crew, R. J., 561 Carlaw Ave., Toronto.
Criddle, Norman, Treesbank, Man.
Dawson, Horace, Hymers, Ont.
Day, G. O., Duncans, B.C.
Dod, F. H. Wolley, Millarville, Alta.
Evans, J. D., Trenton, Ont.
Fyles, Rev. T. W., Hull, Que.
Gibson, Arthur, Experimental Farm, Ottawa.
Hahn, Paul, 433 Indian Road, Toronto.
Haight, D. H., Sudbury, Ont.
Hanham, A. W., Duncans, B.C.
Harms, J. F., Treesbank, Man.
Harrington, W. H., P.O. Department, Ottawa.
Heath, E. F., Cartwright, Man.
Hewitt, Dr. C. Gordon, Experimental Farm, Ottawa.
Hudson, A. F., Millarville, Alta.
Keen, Rev. J. H., Metlakatla, B.C.
Leavitt, A. G., St. John, N.B.

Lyman, H. H., 74 McTavish Street, Montreal.
McIntosh, W., St. John, N.B.
Metcalfe, W., 20 Lisgar St., Ottawa.
Moore, G. A., 850 St. Hubert St., Montreal.
Moore, W. H., Scotch Lake, N.B.
Metcalfe, W., 284 Lisgar St., Ottawa.
Nelles, Douglas H., Dept. Interior, Ottawa.
Nicholls, Arch., Sault Ste. Marie, Ont.
Perrin, Jos., McNab's Island, Halifax, N.S.
Rowland, Alton, Windsor Mills, Que.
Sanders, G. E., Experimental Farm, Ottawa.
Sanson, N. B., Banff, Alta.
Simpson, W., Dominion Observatory, Ottawa.
Southee, G. R., Sherbrooke, Que.
Swaine, J. M., Experimental Farm, Ottawa.
Taylor, Rev. G. W., Departure Bay, B.C.
Tothill, J. D., Experimental Farm, Ottawa.
Treherne, R. C., Vancouver, B.C.
Walker, Dr. E. M., Biological Department, University of Toronto.
Wallis, J. B., Machray St., Winnipeg, Man.
Willing, Prof. T. N., Saskatoon, Sask.
Winn, A. F., 32 Springfield Ave., Westmount, Que.
Young, C. H., Geological Survey, Ottawa.

NOTES OF CAPTURES.

(Species described during 1911 are preceded by an asterisk.)

Lepidoptera.

(Arranged according to Dyar's List of North American Lepidoptera, U.S. N.M. Bull. No. 52).

(Dyar's number).

65. *Eurymus eurytheme* Bdv. Mayo, Que., Aug. 26, (A. E. Richard).
92. *Euptoieta claudia* Cram. Toronto, Sept. 10, 1910, (P. Hahn). The third specimen taken at Toronto.
112. *Argynnis behrensii* Edw. Victoria, B.C., (Taylor).
113. *Argynnis halcyone* Edw. Peachland, B.C., July 18, 1907, (Wallis).
* *Argynnis sakuntala* Skinner. Ainsworth, B.C., Aug. 13, 1903, (Rev. G. H. Findlay); Kaslo, B.C., July 7, 1890, (Cockle); Laggan, Alta., (T. E. Bean); Entomological News, March, 1911, p. 108.
138. *Brenthis freija* Thunb. Mer Bleue near Ottawa, June 6, (Young). The first record for the Ottawa district.
207. *Polygonia satyrus* Edw. Hymers, Ont., May 9, (Dawson).
216. *Eugonia californica* Bdv. Saskatoon, Sask., Oct. 7. Only record I know of for the Province (Willing).
223. *Junonia coenia* Hbn. London, Ont., Sept. 24. (Morden); Sudbury, Ont., (Haight).

268. *Erebia discoidalis* Kirby. Roland, Man., June, 1909, (Record sent by Mr. Wallis).

270. *Erebia disa* Thunb. a. *mancinus* D. & H., Hymers, Ont., (Dawson).

345. *Thecla edwardsii* Saund. Treesbank, Man., July 18, 1910, (Wallis).

378. *Incisalia niphon* Hbn. Hymers, Ont., May 6, (Dawson).

419. *Nomiades couperii* Grt. Hymers, Ont., May 9, (Dawson).

463. *Amblyscirtes samoset* Scudd. Stony Mountain, Man., June 11, 1910. (Wallis).

529a. *Euphyes vestris* Bdv., a. *metacomet* Harr. Husavick, Man., July 3, 1910, (Wallis).

602. *Thorybes electra* Lint. In a letter dated July 27, 1911, Dr. Henry Skinner says: "I have discovered that *Eudamus electra* Lint., described many years ago, and taken at Hamilton, Ont., is an exotic species. It probably came to Canada as larva or pupa on fruit. See also Trans. Amer. Ent. Soc. Vol xxxvii., p. 208."

657. *Lepisesia flavofasciata* Walk. Meach Lake, Que., May 27, flying in bright sunshine, (Young).

678. *Pholus pandorus* Hbn. Toronto, (Centre Island Breakwater), July 30, (P. Hahn).

699. *Phlegethontius convolvuli* L. a *cingulata* Fab. Hull, Que., fresh specimen, Sept. 1, (Fyles).

708. *Sphinx pinastri* L. A specimen taken at Waghorn, Alta., is in the collection of Dr. William Barnes. (Psyche xvii., 197, 1910).

817. *Clemensia albata* Pack. East Bolton, Que., on tree trunks in maple grove, July, (Winn).

943. *Androloma mac-cullochii* Kirby. St. Johns, Que., June 21, on lilac bloom, (W. Chagnon).

* *Demas electa* Sm. Winnipeg, Man., May 31, 1909, (Wallis); Jour. N.Y. Ent. Soc., Sept., 1911, p. 134.

981. *Apatela cretata* Sm. Winnipeg, Man., June 14, (Wallis).

* *Acronycta tristis* Sm. "Canada, viii.,5"; Ent. News, July, 1911, p. 316.

1047. *Aphareta pyralis* Sm. Banff, Alta., July 14, Aug. 28, 29, (Sanson); Cranbrook, B.C., Oct., 10, 1903, (C. G. Garrett). The latter is a new record for British Columbia. The date seems very late, if correct, (Dod).

1050. *Merolonche lupini* Grt. Banff, Alta., June 12, 1910, (Sanson). New to Alberta, (Dod).

Bryophila avirida Sm. Humbolt, Sask., June 13, 1910, (E. Androchovitz).

Moma geminata Sm. Winnipeg, Man., June 10, 1910, (Wallis).

Hadenella subjuncta Sm. Saskatoon, Sask., July 13, (Willing).

Hadena commoda Walk. (Hampson, vii., p. 199). Hymers, Ont., June 21-28, 1910 and 1911, (Dawson). The name should be used as prior to *alberta* Sm. *Satina* Streck. is probably the same species. I have three from Hymers, all of which are like specimens from Calgary; also one from Sudbury, Ont., (Dod).

Hadena bonilla Barnes. This was recorded last year from Metlakatla, B.C. The name is merely a manuscript one, chosen years ago but never published. I believe it to be the same as *multicolor* Dyar, described from Victoria, B.C., though specimens stand under both names in the Washington Museum. It is an ally of *vultuosa*, (Dod).

1151. *Hadena violacea* Grt. Banff, Alta, Sept. 20, 1909, (Sanson); new to Alberta (Dod).

1223. *Hadena morna* Streck. The record of this species from Duncans, B. C., is probably an error due to a misunderstanding of a note given by me. I have never seen genuine *morna* from anywhere but Colorado, and very few from there, (Dod).

Hadena albiserrata Sm. Duncans, B.C., Sept. and part of October, abundant; usually a rare species, (Hanham).

* *Polia hanhami* Barnes and McDunnough. Duncans, B.C., (Hanham). Jour. N.Y. Ent. Soc., Sept., 1911, p. 155.

1281. *Hyppa brunneicrista* Sm. Banff, Alta., June 5-9, (Sanson).

Feralia columbiana Sm. Winnipeg, Man., May 28, 1909, (Wallis).

Setagrotis dolens Sm. Banff, Alta., July 25, (Sanson); rather more reddish than any hitherto seen. *Euxoa quinta* Smith appears to me to be the same species, (Dod).

Setagrotis filiis Sm. Banff, Alta., Aug. 14. Sept. 11, about a dozen specimens, (Sanson). Apparently not the same as *infimatis* Grt., as I suggested in last year's Record, though I rather expect to find another prior name for it, (Dod).

1455. *Agrotis geniculata* G. & R. Aweme, Man., (Criddle); Trenton, Ont., Aug. 22, (Evans).

1464. *Peridroma astricta* Morr. Stony Mountain, Man., July, 1910, (Wallis).

1506. *Noctua substrigata* Sm. Cartwright, Man., July 18, (Heath).

1541. *Feltia pectinicornis* Sm. Trenton, Ont., Aug. 3, 22, (Evans).

Porosagrotis delorata Sm. High River, Alta., Sept. 1, (Baird). The type was from Mr. Baird. I received it seven years ago from Regina, Sask. It is very likely a dark form of *orthogonia,* which is not uncommon in Colorado and Utah, (Dod). The larvæ of this moth were abundant at Lethbridge, Monarch, and other places in Southern Alberta during the past season, causing serious damage to fodder plants, etc. Moths emerged at Ottawa on Aug 14 and 20, (A.G.).

1693. *Paragrotis mollis* Walk. Banff. Alta., July 8, (Sanson).

Euxoa cocklei Sm. Dawson, Y.T., 1909, (Day).

* *Euxoa rubiata* Sm. Calgary, Aug. 29, (Dod); Trans. Amer. Ent. Soc. xxxvi., 255.

* *Euxoa cervinea* Sm. Vancouver, B.C., July 16; Banff, Alta., Aug. 10; Calgary, Alta., Aug. 30. Trans. Amer. Ent. Soc., xxxvi., 262.

* *Euxoa indensa* Sm. Cartwright, Man., Aug. 19, (Heath); Brandon, Man., July 14, (Hanham); Trans. Amer. Ent. Soc., xxxvi., 263.

Mamestra carbonifera Hamp. Banff, Alta., July 25, 2 males, (Sanson). Described from 2 females taken in the Alberta Rockies, by Mrs. Nicholl. I have a female taken here (Pine Creek) on July 4, 1904. It is a broad-winged species nearest *imbrifera,* of which I, at first, thought it might be a melanic form. Sir George Hampson described it as *Miselia carbonifera,* though the genus is not in his catalogue, (Dod).

1795. *Mamestra nevadae* Grt. Saskatoon, Sask., June 21, (Willing).

Mamestra morana Sm. Banff, Aug. 18, one male, (Sanson). This is "*trifolii* var. *oregonica*" of both Alberta and Kootenai lists and its description as new appears to have been quite justified. It also occurs in Colorado, Wyoming and Washington, (Dod).

* *Mamestra chunka* Sm. Aweme, Man., May 13, 20, 22, (Criddle); Trans. Amer. Ent. Soc. xxxvi., p. 265. High River, Alta., May 4, 1910, (Baird). This is a close ally of *crotchii* Grt., and bears some resemblance to *obesula* and *farnhami,* (Dod).

1920. *Ulolonche orbiculata* Sm. Aweme, Man., May 3, 1910, one female, (Criddle). I believe this to be a small obscure form of this species, which seems rather common in Colorado and Utah, though it may prove distinct. I know of no previous record for Canada, (Dod).

2024. *Graphiphora furfurala* Grt. Trenton, Ont., July 6, (Evans).

* *Stretchia algula* Sm. "Arrow Lake, Brit. Col." Jour. N.Y. Ent. Soc., Sept., 1911, p. 148.

* *Fishia instruta* Sm. De Clair, Man., Sept. 3-15, Trans. Amer. Ent. Soc., xxxvi., 264. Regarding this species Mr. Dod writes: "I have not identified it with certainty, but it appears to be very like the species wrongly listed as *yosemitæ* in the Alberta list."

2083. Xylinia longior Sm. Cartwright, Man., Oct. 12, one specimen, first taken here, (Heath).

2123. *Cucullia montanæ* Grt. Aweme, Man., July 20, (Criddle); Regina, Sask., July 3, 1910, (Willing).

* *Papaipema moeseri* Bird. Montreal, Que., Can. Ent., Feb'y, 1911, p. 42.

2200. *Xanthia pulchella* Sm. Duncans, B.C., not uncommon in Sept. and Oct., (Hanham).

2205. *Conservula anodonla* Gn. Trenton, Ont., July 12, not taken here previously, (Evans).

2231. *Orthosia lulosa* Andrews. Aweme, Man., June 24, (Criddle).

Agroperina lineosa Sm. Described from thirty specimens from Calgary, Alta., and several localities in Manitoba. It is the "*Orthosia conradi*" of my Alberta list, and may really be a race of that species. It has often been, quite erroneously, confused with *Hadena morna* Strk., (Dod).

Agroperina pendina Smith. Has the same range as *lineosa* and has already been looked upon by me as a red variety of it, to which opinion I shall adhere, though slight genitalia differences are claimed, (Dod).

2280. *Pippona bimatris* Harvey. Aweme, Man., July 20, 1910, (Criddle). Previously taken by the late Dr. Fletcher at Aweme.

2289. *Copablepharon grandis* Streck. Aweme, Man., July 4-14, (Criddle). Previously recorded as *absidum*. This latter has not been taken here, according to Dod.

2290. *Copablepharon longipenne* Grt. Aweme, Man., Aug. 19, 1910, one female, (Criddle). This specimen now in my collection agrees with Hampson's figure and my notes on the type. New record for Canada, (Dod).

2492. *Autographa californica* Speyer. Cartwright, Man., May 23, for the first time, at currant bloom; was previously recorded from Winnipeg by Hanham, (Heath).

2493. *Autographa ou* Gn. Aweme, Man., Sept. 27, 1909, one female, (Criddle). I believe this to be the first record for Canada. The species closely resembles *californica* but is darker and less brightly marked. There are slight, though constant, differences in markings. Structurally *ou* has hind tibiae strongly spined, whilst *californica* has not, (Dod).

2494. *Aulographa rubidus* Ottol. Aweme, Man., June 15, 1910, (Criddle).

2555. *Alabama argillacea* Hbn. Conspicuous flights of this southern Cotton Moth occurred in Western Ontario in Sept., 1911. At Sarnia and St. Thomas they were extremely abundant. (See Ottawa Naturalist xxv., Dec., 1911, p. 129). Mr. Winn has also reported that the moths were abundant "at light" in Montreal, in the middle of September, (A. G.).

2730. *Melanomma auricinctaria* Grt. Montreal, June, (Chagnon).

2799. *Syneda hudsonica* G & R. Aweme, Man., July 4, 1907, (Criddle).

2847. *Catocola semirelicta* Grt. Hymers, Ont., (Dawson). This specimen was compared with type in British Museum by Sir George Hampson and Mr. H. H. Lyman.

2948. *Anticarsia gemmatilis* Hbn. Winnipeg, Man., Oct. 5, 1909, (Wallis).

3010. *Epizeuxis nigellus* Streck. St. Johns, Que., July, (Chagnon).

3064. *Bomolocha manalis* Walk. Trenton, Ont., 2 sp., July 20, 29; new record for district, (Evans).

3151. *Schizura unicornis* S. & A. High River, Alta., July 29, (Baird).

3181. *Euthyatira semicircularis* Grt. Duncans, B.C., (Hanham).

Bombycia fasciata Barnes & McDonnough. Described in 1910 from Duncans, V.I., (Hanham). It is the species figured by Holland on Plate XL., fig. 27, as *tearlii* Hy. Edw.; *provisa* Hy. Edw. is a third species. (Dod).

* *Olene styx* Barnes and McDunnough. Duncans, B.C., (Hanham); Psyche, Oct., 1911, p. 159.

3272. *Eupithecia palpata* Pack. Hudson, Que., June 11, (Chagnon). A rare species and wrongly placed as a synonym of *luteata* Pack. (L. W. Swett).

3276. *Eupithecia ornata* Hulst. "Ottawa, April 24, May 4, 1906, (Young)". *Ottawa Naturalist,* xxv., p. 106. Regarding this record, Mr. Grossbeck says: "I doubt the occurrence of this species in Eastern Canada; more likely the specimens are worn examples of *E. palpata* Pack." These specimens of Mr. Young's were named *ornata* by the Rev. G. W. Taylor, and as far as I can remember were fresh and therefore in good condition, (A.G.).

3281. *Euchoeca inornata* Hulst. Sherbrooke, Que., July 1, 1910, (Chagnon).

* *Eupithecia chagnoni* Swett. Montreal, Que., June 22, 1907. Can. Ent., July, 1911, p. 255.

3288. *Eupithecia plumbaria* Hulst. "Ottawa, May 24, 1906, (Taylor)," *Ottawa Naturalist* xxv., p. 106. Pearsall makes this a synonym of *E. miserulata* Grt., (J. A. G.).

3295. *Eupithecia fumosa* Hulst. Described from Brockport, N.Y., and S. Abington, Mass. Pearsall says the latter is *coagulata* Gn. "and so the name must be dropped from our lists." The Brockport type still remains to be discovered, however, and until this is examined the name must remain in our catalogue.(J. A. G.). A specimen taken at Ottawa, June 3, 1904, was named *fumosa?* by Rev. G. W. Taylor, (A. G.).

3319. *Eupithecia raveocostaliata* Pack. Trenton, Ont., May 8, (Evans).

Eupithecia meritata Pears. Trenton, Ont., Aug. 1-23, (Evans).

Eupithecia youngata Tayl. Bancroft, Ont., June 11, 1906, (Evans).

3353. *Eustroma nubilata* Pack. St. Johns, Que., July 15. (Chagnon).

3494. *Xystrota hepaticaria* Gn. Trenton, Ont., 2 sp., Aug. 1, 3, (Evans).

3657. *Sciagraphia neptaria* Gn. Saskatoon, Sask., July 3, (Willing).

3662. *Sciagraphia continuata* Walk. Mt. St. Hilaire, Que., May 29, 1910, (Chagnon).

3671. *Macaria labradoriata* Moesch. Ottawa, Aug. 12, 1904, (Fletcher). See *Ottawa Naturalist,* Oct.-Nov., 1911.

3689. *Cymatophora virginalis* Hulst. Trenton, Ont., July 21, (Evans).

Caripeta criminosa Swett. Hymers, Ont., July 2, (Dawson).

3782. *Nepytia phantasmaria* Streck. Duncans, B.C., Oct. 9, only specimen taken, (Hanham).

3793. *Alcis guttata* Hulst. Ottawa, June 20, 1894, (Fletcher). See *Ottawa Naturalist*, Oct.-Nov., 1911, p. 110.
3804. *Spodolepis substriataria* Hulst. Hymers, Ont., April 28, July 9, (Dawson).
* *Selidosema manitoba* Grossbeck. Winnipeg, Man., May 25 to June 2, 1909, (Wallis). Can. Ent., July, 1911, p. 225.
3855. *Cleora larvaria* Gn. Windsor Mills, Que., June 10, (Rowland); Saskatoon, Sask., June 23, (Willing).
3942. *Gonodontis warneri* Harv. Humbolt, Sask., (E. Androchovitz).
4043. *Callizzia amorata* Pack. East Bolton, Que., July 20, (Winn).
4175. *Memythrus tricinctus* Harr. Ottawa, larvæ found in willow, April 23, 2 moths emerged, June 2, 8, (Beaulne).
4556. *Raphiptera argillacella* Pack. Trenton, Ont., July 11, 12, (Evans).
4583. *Crambus myellus* Hbn. Peachland, B.C., Aug. 21, (Wallis).
4599. *Crambus oregonicus* Grt. Peachland, B.C., Aug. 19, (Wallis).
Crambus dorsipunctellus Kearf. Penticton, B.C., Aug. 11, (Wallis).
* *Dioryctria xanthœnobares* Dyar. Kaslo, B.C., Aug. 20, 1905, (Cockle); Proc. Wash. Ent. Soc., xiii., 81.
4723. *Glyptocera consobrinella* Zell. Mt. St. Hilaire, Que., June, (Chagnon).
4767. *Salebria basilaris* Zell. St. Johns, Que., July, (Chagnon).
4835. *Euzophera ochrifrontella* Zell. Mt. St. Hilaire, Que., July, (Chagnon).
4838. *Vitula edmandsii* Pack. Mt. St. Hilaire, Que., July, (Chagnon).
4843. *Canarsia ulmiarrosorella* Clem. Mt. St. Hilaire, Que., July, (Chagnon); Montreal, July, (Winn).
4849. *Hulstea undulatella* Clem. Montreal, July, (Winn).
4940. *Platyptilia edwardsii* Fish. Mt. St. Hilaire, Que., May, (Winn).
4964. *Pterophorus elliottii* Fern. Montreal, July, (Winn).
4983. *Pterophorus cupatorii* Fern. Montreal, July, (Winn).
5023. *Exartema exoletum* Zell. Montreal, June 30, 1909, (Winn).
5073. *Olethreutes impudens* Wlsm. Montreal, July 1, 1909, (Winn).
Eucosma confluana Kearf. Montreal, July 4, 1908, (Winn).
Eucosma bilinearia Kearf. Cartwright, Man., June 25, (Heath).
Eucosma pergandeana Fern. Trenton, Ont., June 3, 12, (Evans).
5222. *Epinotia lagopana* Wlsm. Mt. St. Hilaire, Que., May 20, 1910, (Winn).
Peronea manitobana Kearf. Winnipeg, Man., Oct. 5, (Wallis).
Peronea chalybeana Fern. Winnipeg, Man., Oct. 1, (Wallis).
Peronea heindelana Fern. Montreal, June, (Chagnon).
Sparganothis vocaridorsana Kearf. Lethbridge, Alta., July 3, (Wallis).
Pandemis canadana Kearf. Cartwright, Man., June 23, (Heath).
* *Gnorimoschema septentrionella* Fyles. North Wakefield, Que., (Miss Fyles); Can. Ent., Dec. 1911, p. 422.
5671. *Trichotaphe fernaldella* Busck. Peachland, B.C., Aug. 17, (Wallis).
Gelechia alternatella Kearf. Peachland, B.C., Aug. 17, (Wallis).
5894. *Semioscopsis allenella* Wlsm. Montreal, June, (Chagnon); McNab's Island, Halifax, N.S., July 19, (Perrin).
Holcocera nigristriata Wlsm. Penticton, B.C., Aug. 18, (Wallis)
6166. *Mompha subiridescens* Wlsm. Montreal, June 30, 1909, (Winn).
6372. *Gracilaria alchimiella* Scop. Montreal, July 10, 1909, (Winn).

Coleoptera.

(Arranged according to Henshaw's List of the Coleoptera of America, North of Mexico).

25b. *Cicindela graminea* Schaupp. Calgary, Alta., April 16, (Criddle).
25e. *Cicindela limbalis* Lec. Calgary, Alta., April 16, (Criddle).
106. *Cychrus tuberculatus* Harr. Duncans, B.C., rare, (Hanham).
109. *Cychrus angulatus* Harr. Duncans, B.C., rare, (Hanham).
122. *Carabus limbatus* Say. Edmonton, Alta., June 30, 1910, (Carr).
123. *Carabus vinctus* Web. Edmonton, Alta., (Carr).
224. *Dyschirius integer* Lec. Toronto, 1 specimen, Oct. 1, 1908; somewhat smaller but otherwise identical with specimens which I have from Texas, (Crew).
232. *Dyschirius globulosus* Say. Bannockburn, Ont., June 20, (Evans)
271. *Clivina cordata* Putz. Trenton, Ont., July 10; not taken heretofore, (Evans).
320. *Bembidium chalceum* Dej. Treesbank, Man., July 29, 1910, (Wallis).
330. *Bembidium complanulum* Mann. Peachland, B.C., July 27, 1909, (Wallis).
364. *Bembidium dyschirinum* Lec. Winnipeg, Man., April 9, 1909, (Wallis).
366. *Bembidium cordatum* Lec. Toronto, Nov. 9, 1908, (Crew).
413. *Bembidium cautum* Lec. Trenton, Ont., 2 specimens, May 21, 23; not taken here previously, (Evans).
483. *Trechus chalybeus* Mann. Toronto, April 3, 1908, (Crew).
545. *Pterostichus coracinus* Newm. Treesbank, Man., July 26, 1910, (Wallis).
674. *Amara obesa* Say. Treesbank, Man., July 28, 1910, (Wallis).
784. *Platynus pusillus* Lec. Winnipeg, Man., May 5, 1910, (Wallis).
822. *Platynus quadripunctatus* De G. Winnipeg, Man., April 7, 1910, (Wallis).
836. *Platynus nigriceps* Lec. Aweme, Man., June 9, 1910, (Criddle).
889. *Lebia ornata* Say. Winnipeg, Man., June 17, 1910, (Wallis).
941. *Cymindis planipennis* Lec. Treesbank, Man., Aug. 3, 1910, (Wallis).
1061. *Agonoderus pallipes* Fab., var. Winnipeg, Man., April 13, 1909, (Wallis).
1104. *Harpalus rufimanus* Lec. Winnipeg, Man., May 18, 1909, (Wallis)
1110. *Harpalus funestus* Lec. Winnipeg, Man., May 20, 1909, (Wallis).
1145. *Stenolophus ochropezus* Say. Winnipeg, Man., May 8, 1909, (Wallis).
1150. *Acupalpus carus* Lec. Winnipeg, Man., April 15, 1909, (Wallis).
1181. *Anisodactylus carbonarius* Say. Trenton, Ont., May 29, (Evans).
1198. *Anisodactylus verticalis* Lec. Winnipeg, Man., May 7, 1910, (Wallis).
1222. *Haliplus borealis* Lec. Selkirk, Man., May 5; Winnipeg, Man., Oct. 14, (Wallis).
1447. *Agabus gagates* Aube. Edmonton, Alta., May 24, (Carr).
1490. *Dytiscus dauricus* Gebl. Alaska; found at the crossing of the Old Crow River by the 141st meridian, July 20, (F. Lambart).
1675. *Cercyon prætextatum* Say. Winnipeg, Man., April 13, 1909, (Wallis).
1699. *Necrophorus obscurus* Kirby. Edmonton, Alta., April 15, 1910, (Carr).
1786. *Liodes obsoleta* Horn. Toronto, Oct. 9, 1908,(Crew).
Scydmænus claripes Say. Toronto, March and April, (Crew).
1820. *Scydmænus perforatus* Schaum. Toronto, 2 specimens found under stones, March and April, (Crew).
Pilopius saginatus Casey. Port Credit, Ont., Nov. 9, 1908, (Crew).
1889. *Decarthron longulum* Brend. Toronto, April 23, 1907, (Crew).
2304. *Stenus colon* Say. Toronto, on wet sand along bank of stream, June 6, 1908, (Crew).
* *Baryodma rubricalis* Csy. Metlakatla, B.C., (Keen).
* *Baryodma concurrens* Csy. Metlakatla, B.C., (Keen).

* *Emplenota longiceps* Csy. Metlakatla, B.C., (Keen).
* *Oxypoda demissa* Csy. "Canada, (probably southern Ontario)."
* *Oxypoda manitobæ* Csy. Aweme, Man., (Criddle).
* *Oxypoda hiemalis* Csy. Ottawa, Ont., (Harrington).
* *Oxypoda optiva* Csy. Victoria, B.C.
* *Oxypoda lassula* Csy. Stikine River, B.C., (Wickham).
* *Oxypoda egestosa* Csy. Victoria, B.C., (Wickham).
* *Oxypoda famula* Csy. Massett, Q. C. I., (Keen).
* *Oxypoda regressa* Csy. Victoria, B.C., (Wickham).
* *Myrmedonia criddlei* Csy. Aweme, Man., (Criddle).
* *Trichiusa columbica* Csy. Metlakatla, B.C., (Keen).
* *Athetá manitobæ* Csy. Aweme, Man., (Criddle).
* *Atheta achromata* Csy. Metlakatla, B.C., (Keen).
* *Atheta profecta* Csy. Metlakatla, B.C., (Keen).
* *Atheta concessa* Csy. Metlakatla, B.C., (Keen).
* *Atheta postulans* Csy. Metlakatla, B.C., (Keen).
* *Atheta apposita* Csy. Metlakatla, B.C., (Keen).
* *Atheta sumpta* Csy. Metlakatla, B.C., (Keen).
* *Atheta relicta* Csy. Metlakatla, B.C., (Keen).
* *Atheta districta* Csy. Metlakatla, B.C., (Keen).
* *Atheta rurigena* Csy. Yale, B.C., (Wickham).
* *Atheta mordax* Csy. Stickine River, B.C., (Wickham).
* *Atheta tenuicula* Csy. Aweme, Man., (Criddle).
* *Metaxya awemeana* Csy. Aweme, Man., (Criddle).
* *Metaxya prognata* Csy. Metlakatla, B.C., (Keen).
* *Metaxya erudita* Csy. Aweme, Man., (Criddle).
* *Metaxya surrufa* Csy. Aweme, Man., (Criddle).
* *Metaxya varula* Csy. Aweme, Man., (Criddle).
* *Metaxya criddlei* Csy. Aweme, Man., (Criddle).
* *Pseudota vana* Csy. Massett, Q. C. I., (Keen).
* *Pseudota cornicula* Csy. Metlakatla, B.C., (Keen).
* *Pseudota nanulina* Csy. Metlakatla, B.C., (Keen).
* *Pseudota formalis* Csy. Metlakatla, B.C., (Keen).
* *Moluciba grandipennis* Csy. Metlakatla, B.C., (Keen).
* *Pontomalota luctuosa* Csy. Massett, Q. C. I., (Keen).
* *Autalia truncatula* Csy. Massett, Q. C. I., (Keen).
* *Autalia brevicornis* Csy. Metlakatla, B.C., (Keen).
* *Stictalia carlottæ* Csy. Massett, Q. C. I., (Keen).
* *Gyrophæna criddlei* Csy. Aweme, Man., (Criddle).
* *Gyrophæna keeni* Csy. Metlakatla, B.C., (Keen).
* *Placusa turbata* Csy. Metlakatla, B.C., (Keen).
* *Amblopusa pallida* Csy. Victoria, B.C., (Wickham).
* *Thinusa divergens* Csy. Metlakatla, B.C., (Keen).
* *Thinusa nigra* Csy. Metlakatla, B.C., (Keen).
* *Thinusa robustula* Csy. Metlakatla, B.C., (Keen).
* *Deinopsis harringtoni* Csy. Ottawa, Ont., (Harrington).
* *Myllæna immunda* Csy. Ottawa, Ont., (Harrington).
* *Myllæna scobinella* Csy. Metlakatla, B.C., (Keen).

The above new species of Aleocharinæ and Myllæninæ were described in Memoirs on the Coleoptera, II., by Thos. L. Casey, issued Aug. 15, 1911.

2559. *Lithocharis corticina* Grav. Trenton, Ont., May 23, (Evans).
2719. *Bledius fumatus* Lec. Trenton, Ont., June 20, (Evans).
2736. *Bledius tau* Lec. Trenton, Ont., May 23; not taken heretofore, (Evans).
3069. *Harmonia picta* Rand. Aweme, Man., June 10, 1909, (Criddle).
Hyperaspis binotata Say. Aweme, Man., July, 6., 1905, (Criddle).
3156. *Scymnus tenebrosus* Muls. Toronto, under mullein leaves, March and April, (Crew).
3198. *Endomychus biguttatus* Say. Westbourne, Man., Aug. 27, 1908, (Wallis).
3353. *Telephanus velox* Hald. Port Credit, Ont., Nov. 9, 1908, (Crew).
Cryptophagus laticlavus Casey. Trenton, Ont., Sept. 1; not taken heretofore, (Evans).
3381. *Atomaria distincta* Casey. Winnipeg, Man., May 15, 1909, (Wallis). Described from District of Columbia.
3477. *Hister harrisii* Kirby. Edmonton, Alta, (Carr).
3520. *Hister lecontei* Mars. Aweme, Man., June 20, (Criddle.
3678. *Carpophilus niger* Say. Aweme, Man., June 9, 1910, (Criddle).
3689b. *Colastus limbatus* Lec. Aweme, Man., June, 9, 1910, (Criddle).
3728. *Omositá discoidea* Fab. Winnipeg, Man., May 18, 1910, (Wallis).
3746. *Cyllodes biplagiatus* Lec. Aweme, Man., July 4, 1910, (Criddle).
3772. *Rhizophagus remotus* Lec. Aweme, Man., June 9, 1910, (Criddle).
4234. *Elater luctuosus* Lec. Near Shelburne, N.S., July 12, (Gibson).
4384. *Athous brightwelli* Kirby. Near Shelburne, N.S., July 12, (Gibson).
4385. *Athous acanthus* Say. Trenton, Ont., 2 specimens, June 27, July 30, (Evans).
4486. *Corymbites æripennis* Kirby. Near Shelburne, N.S., July 12, (Gibson).
4494. *Corymbites arátus* Lec. Near Shelburne, N.S., July 12, (Gibson).
4583. *Dicerca tenebrosa* Kirby. Aweme, Man., Aug. 11, 1903, (Criddle).
4620. *Melanophila atropurpurea* Say. Winnipeg, Man., June 20, 1909, (Wallis).
4630. *Anthaxia viridifrons* Lap. Aweme, Man., June 21, 1909, (Criddle).
Chrysobothris mali Horn. Aweme, Man., June 22, 1910, (Criddle).
4639b. *Chrysobothris 4-impressa* Lap. & Gory. Aweme, Man., July 2, 28, 1910. (Criddle).
4699. *Acmœodera pulchella* Hbst. Aweme, Man., July 10, 1910, (Criddle).
4755. *Taphrocerus gracilis* Say. Aweme, Man., July 22, 1910, (Criddle).
4762. *Brachys æruginosa* Gory. Aweme, Man., Aug. 10, 1908, (Criddle).
4780. *Caenia dimidiata* Fab. Winnipeg Beach, Man., July 11, 1910, (Wallis).
4810. *Lucidota atra* Fab. Aweme, Man., June 19, 1905, (Criddle).
4815. *Ellychina corrusca* L., var. *lacustris* Lec. Winnipeg, Man., May 21, 1909, (Wallis).
4829. *Photinus ardens* Lec. Winnipeg Beach, Man., July 2, 1910, (Wallis).
Telephorus impressus Lec. Trenton, Ont., June 4, not taken heretofore, (Evans).
4947. *Telephorus rotundicollis* Say. Near Shelburne, N.S., July 12, (Gibson).
4966. *Polemius laticornis* Say. Trenton, Ont., May 29, (Evans).
5022. *Malachius æneus* L. Trenton, Ont., June 9, not taken heretofore, (Evans).
5185. *Thanasimus undulatus* Say. Winnipeg, Man., June 10, 1909, (Wallis).
5206. *Hydnocera longicollis* Ziegl. Aweme, Man., Aug. 3, 1903, (Criddle).
5493. *Atænius stercorator* Fab. Trenton, Ont., 3 specimens, May 21-23, (Evans).
5600. *Geotrupes egeriei* Germ. Ste Therese, Que., (Mignault).
5627. *Trox æqualis* Say. Aweme, Man., April 25, 1910, (Criddle).
5630. *Trox atrox* Lec. Aweme, Man., May 8, 1908, (Criddle).

5699. *Diplotaxis sordida* Say. Trenton, Ont., May 27, (Evans).
5767. *Lachnosterna fraterna* Harr. Trenton, Ont., May 6, June 5; not taken heretofore, (Evans).
5774. *Lachnosterna rugosa* Melsh. Trenton, Ont., May 2-June 9, not taken heretofore, (Evans).
5982. *Tetropium cinnamopterum* Kirby. Winnipeg, Man., June 5, 1909, (Wallis).
5992. *Hylotrupes ligneus* Fab. Winnipeg, Man., May 4, 1910, (Wallis).
6279. *Bellamira scalaris* Say. Winnipeg Beach, Man., July 6, 1910, (Wallis).
6354. *Leptura pubera* Say. Winnipeg, June 25, 1910, (Wallis).
6389. *Monohammus marmorator* Kirby. Ste Therese, Que., (Mignault); Ste. Anne de Bellevue, Que., (Chagnon and Swaine).
6418. *Leptostylus biustus* Lec. Trenton, Ont., July 9. (Evans).
6424. *Liopus variegatus* Hald. Trenton, Ont., July 4, (Evans).
6480. *Saperda candida* Fab. Edmonton, Alta., June 17, (Carr).
6485. *Saperda tridentata* Oliv. Edmonton, Alta., June, 1910, (Carr).
6532. *Donacia hirticollis* Kirby. Winnipeg Beach, Man., Aug. 13, 1910, (Wallis).
6534. *Donacia proxima* Kirby. Aweme, Man., July 27, 1910, (Criddle).
6549. *Hæmonia nigricornis* Kirby. Selkirk, Man., May 24, (Wallis).
6697. *Pachybrachys hepaticus* Melsh. Aweme, Man., Aug. 2, 1909, (Criddle).
6720. *Xanthonia 10-notata* Say. Aweme, Man., May 26; Aug. 31, 1910, (Criddle).
6747b. *Paria 4-notata* Say. Aweme, Man., June 10, 1909, (Criddle).
6786. *Prasocuris vittata* Oliv. Winnipeg, Man., May 15, 1909, (Wallis).
Chrysomela staphylea Linné. McNab's Island, Halifax, N.S., (Perrin). See Entomological News, July, 1911, p. 306.
6832. *Gastroidea cyanea* Melsh. Edmonton, Alta, May 12, July 1, 1910, (Carr).
6848. *Phyllobrotica discoidea* Fab., rare form, Trenton, Ont., June 25, (Evans).
6895. *Trirhabda convergens* Lec. Aweme, Man., June 25,; Aug. 2, 1909, (Criddle).
6932a. *Oedionychis scripticollis* Say. Edmonton, Alta., May 29, 1910, (Carr).
6933. *Oedionychis lugens* Lec. Aweme, Man., May 14; Oct. 6, 1904, (Criddle).
6948. *Disonycha alternata* Ill. Edmonton, Alta., Aug. 23, 1909, (Carr).
7042. *Chætocnema protensa* Lec. Aweme, Man., April 20, 1905, (Criddle).
7102. *Coptocycla aurichalcea* Fab. Winnipeg, Man., Sept. 4, 1909, (Wallis).
Coptocycla bicolor Fab. Edmonton, Alta., May 29, (Carr).
7401. *Upis ceramboides* Linn. Rampart House, at the crossing of the Porcupine River by the 141st Meridian; elevation 1400 ft., July 20, (Nelles). A very northern record.
7528. *Scaphidema æneolum* Lec. Aweme, Man., June 7, 1909, (Criddle).
7651. *Synchroa punctata* Newm. Near Shelburne, N. S., July 12, (Gibson).
Eustrophus repandus Horn. Aweme, Man., June 20, 1910, (Criddle).
7710. *Pytho americanus* Kirby. Winnipeg, Man., June 9, 1910, (Wallis).
7757. *Cephaloon lepturides* Newm. Near Shelburne, N.S., July 12, (Gibson).
7886. *Corphyra elegans* Hentz. Winnipeg, Man., June 17, 1910, (Wallis).
7970. *Anthicus pubescens* Lec. Trenton, Ont., May 1. Not taken here previously, (Evans).
7997. *Dendroides ephemeroides* Mann. Winnipeg Beach, July 6, 1910, (Wallis).
8079. *Epicauta trichus* Pall. Aweme, Man., June 19, 21, 1910, (Criddle).
8236. *Barynotus schœnherri* Zett. Near Shelburne, N.S., July 12, (Gibson). Only Canadian record that I know of.

8487. *Lexius rubellus* Rand. Bannockburn, Ont., June 20; never took it before, (Evans).

8563. *Phyllotrox nubifer* Lec. Aweme, Man., June 2, 1908. (Criddle).

Cryptorhynchus lapathi L. Trenton, Ont., Aug. 27; never taken here previously, (Evans). Mr. John Dearness, of London, Ont., reported that he had received a specimen from New Brunswick.

* *Pissodes utahensis* Hopk. British Columbia, Bear Lake, (London Hill Mine); Tech. Series, 20, part 1, p. 45, U. S. Bureau of Entomology.

* *Pissodes approximatus* Hopk. Guelph, Ont.; Tech. Series 20, part 1, p. 49, U. S. Bureau of Entomology.

* *Pissodes schwarzi* Hopk. Banff, Alta.; Tech. series 20, part 1, p. 50, U. S. Bureau of Entomology.

* *Pissodes canadensis* Hopk. Winnipeg, Man., (Hanham); Tech. series 20, part 1, p. 51, U. S. Bureau of Entomology.

* *Pissodes piperi* Hopk. Glacier, B.C., Tech. series 20, part 1, p. 62, U. S. Bureau of Entomology.

* *Pissodes curriei* Hopk. Kaslo, B.C., (R. P. Currie); Tech. series 20, part 1, p. 65, U. S. Bureau of Entomology.

9071. *Pityophthorus cariniceps* Lec. Ste. Anne de Bellevue, Que.; Ste. Hilaire, Que.; Howick, Que., (Swaine).

9087. *Pityophthorus opaculus* Lec. Hudson, Que., Ste. Anne de Bellevue, Que, Lake Durnford, Que., in *Pinus, Picea* and *Larix,* (Swaine).

* *Trypodendron betulæ* Swaine. Ste. Anne de Bellevue, Que.; Can. Ent., July, 1911, p. 216.

9092. *Typodendron retusus* Lec. Isle Perrot, Que., (Swaine); Aweme, Man., (Criddle).

9099. *Cryphalus striatulus* Mann. Ste. Anne de Bellevue, Que.; Hudson, Que., Memphramagog, Que., (Swaine); Montebello, Que., (Brittain). In *abies,* (J. M. S.).

Dryocœtes eichhoffi Hopk. St. Anne de Bellevue, Que., in *Betula lutea,* (Swaine); St. Anthony, Newfoundland, (C. M. Spencer).

Eccoptogaster piceæ Swaine. St. Anne de Bellevue, Que.; in *Abies balsamea,* (Swaine).

* *Phlœotribus piceæ* Swaine. Ste. Anne de Bellevue, Que.; Can. Ent. July, 1911, p. 220.

9159. *Phlœotribus liminaris* Harr. Isle Perrot, Que.: found only in wild cherry, (Swaine).

* *Ips borealis* Swaine. St. Anthony, Nfd., (C. M. Spencer): Can. Ent., July, 1911, p. 213.

Crypturgus pusillus Gyll. Hudson, Que. (Swaine); Weymouth, N.S. (Treherne and Sanders); in *Pinus, Picea, Abies* (J. M. S.).

Dendroctonus englemanni Hopk. Edmonton, Alta., (Carr).

9204. *Eurymycter fasciatus* Oliv. Stony Mountain, Man., June 11, 1910, (Wallis).

Diptera.

(Arranged according to a Catalogue of North American Diptera, by J. M. Aldrich, Smithsonian Misc. Coll. XLVI, No. 1, 144. The numbers refer to the pages in the catalogue.)

Recently I have had an opportunity of examining a portion of the collection of diptera made at Montreal by Mr. G. Beaulieu, and as there are a number of the

species which have not as yet been recorded from Quebec province, I am including here those of which I have notes. Some of these are well known species, but it is thought well to include them, as they are new additions to the Quebec list. During the past year, as far as I know, no extensive collections of diptera were made in any part of Canada, but a number of specimens collected in previous years have been studied in 1911, and records of some of these are also given.

112. *Chironomus dorsalis* Meign. Rigaud, Que., June 25, 1906, (Beaulieu). New to Quebec province list.

127. *Culex canadensis* Theob. East Bolton, Que., July 22, (Winn). The only Canadian record given by Aldrich is "Lake Simcoe, Ont."

* *Dasyneura gibsoni* Felt. Ottawa, reared from flower heads of Canada thistle, (Gibson); Jour. Econ. Ent., Oct. 1911, p. 479.

164. *Plecia heteroptera* Say. Regina, Sask., Sept. 3-10, 1905, (Willing).

190. *Nemotelus unicolor* Loew. Montreal, June 3, 1906, (Beaulieu). New to Quebec province list.

196. *Chrysops cuclux* Whitney. Rigaud, Que., June 26, 1906, (Beaulieu). Not previously recorded from Quebec province.

198. *Chrysops sackeni* Hine. Montreal, June 24, 1905, (Beaulieu). New to Quebec province list.

217. *Symphoromyia pachyceras* Will. Lake House, Alta., July 15, (Record received from Mr. C. W. Johnson).

247. *Psilocephala melanoprocta* Loew. Aweme, Man., June 1, (Criddle).

247. *Psilocephala platancala* Loew. Aweme, Man., June 24, (Criddle). The only locality record given in Aldrich's catalogue is Texas.

254. *Leptogaster favillaceus* Loew. Rigaud, Que., June, 1906, (Beaulieu). New to Quebec province list.

259. *Cyrtopogon dasyllis* Will. Kaslo, B.C., Sept. 1, 1907, (Cockle). Recorded from Colorado.

259. *Cyrtopogon dasylloides* Will. Kaslo, B.C., Sept. 1, 1907, (Cockle). Recorded from Washington State.

261. *Holopogon guttula* Wied. Rigaud, Que., June 25, 1906, (Beaulieu). New to Quebec province list.

272. *Laphyria ventus* Walk. Montreal, June 7, (Beaulieu). New to Quebec province list.

284. *Psilopodinus caudatus* Wied. Rigaud, Que., June 25, 1906, (Beaulieu). New to Quebec province list.

286. *Psilopodinus scobinator* Loew. Montreal, July 16, 1906, (Beaulieu). New to Quebec province list.

289. *Chrysotus obliquus* Loew. Montreal, July 16, 1906, (Beaulieu). New to Quebec province list.

290. *Chrysotus wisconsinensis* Wheeler. Montreal, July 16, 1906, (Beaulieu). New to Quebec province list.

290. *Campsicnemus hirtipes* Loew. Montreal, July 22, 1906, (Beaulieu). New to Quebec province list.

291. *Argyra calceata* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

293. *Sympycnus lineatus* Loew. Montreal, July 10, 1906, (Beaulieu). New to Quebec province list.

* *Hydrophorus phoca* Aldrich. Corfield, Vanc. Island, B.C., Aug. 7, 1896, (Rev. Mr. Livingston): Psyche, April, 1911, p. 63.

* *Hydrophorus extrarius* Aldrich. St. Johns, Que., Aug. 8, 1901, (Beaulieu); Psyche, April, 1911, p. 66.

300. *Dolichopus brevimanus* Loew. Montreal, July 16, 1906. (Beaulieu). New to Quebec province list.

301. *Dolichopus dakotensis* Aldrich. Montreal, June 14, 1906, (Beaulieu). New to Quebec province list.

301. *Dolichopus detersus* Loew. Montreal, July 22, 1906, (Beaulieu). New to Quebec province list.

302. *Dolichopus latipes* Loew. Montreal, Aug. 14, 1906, (Beaulieu). New to Quebec province list.

303. *Dolichopus ovatus* Loew. Montreal, July 10, 1906, (Beaulieu). New to Quebec province list.

305. *Gymnopternus barbatulus* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

305. *Gymnopternus crassicauda* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

305. *Gymnopternus difficilis* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

306. *Gymnopternus ventralis* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

309. *Pelastoneurus vagans* Loew. Montreal, July 22, 1906, (Beaulieu). New to Quebec province list.

311. *Platypalpus æqualis* Loew. Montreal, July 16, 1906, (Beaulieu). New to Quebec province list.

312. *Platypalpus crassifemoris* Fitch. Montreal, June 17, 1906, (Beaulieu). New to Quebec province list.

312. *Platypalpus hastatus* Melander. Montreal, June 17, 1906, (Beaulieu). New to Quebec province list.

312. *Platypalpus trivialis* Loew. Montreal, Aug. 18, 1906, (Beaulieu). New to Quebec province list.

318. *Syndyas polita* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

319. *Hybos slossonæ* Coq. St. Johns, Que., Aug. 1, (Beaulieu). New to Quebec province list.

319. *Leptopeza compta* Coq. Montreal, July 14, 1906, (Beaulieu). New to Quebec province list.

325. *Hilara femorata* Loew. Rigaud, Que., June, 1906, (Beaulieu). New to Quebec province list.

326. *Hilara tristis* Loew. St. Johns, Que., July 1, (Beaulieu). New to Quebec province list.

329. *Cyrtoma longipes* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.

331. *Rhamphomyia longicauda* Loew. Montreal, June 7, 1906, (Beaulieu). New to Quebec province list.

332. *Rhamphomyia mutabilis* Loew. Montreal, June 10, 1906, (Beaulieu). New to Quebec province list.

350. *Pipiza calcarata* Loew. Montreal, June 3, 1906, (Beaulieu). New to Quebec province list.

350. *Pipiza pulchella* Will. Rigaud, Que., June 27, 1906, (Beaulieu). New to Quebec province list.

358. *Pyrophæna granditarsus* Forst. Ottawa. June 2, 1908, (J. A. Letourneau).
359. *Platychirus chætopodus* Will. Montreal, (Beaulieu); Mr. Chagnon has also seen the species from Sherbrooke, Que. New to Quebec province list.
359. *Platychirus peltatus* Meig. Montreal, June 17, 1906 (Beaulieu); Rigaud, Que., (Record sent by Mr. Chagnon). New to Quebec province list.
362. *Eupeodes volucris* O. S. High River, Alta., (Baird); Regina, Sask., Sept. 2, 1907, (Willing).
369. *Xanthogramma emarginata* Say. Montreal, July 16, 1906, (Beaulieu). New to Quebec province list.
373. *Sphaerophoria scripta* Linne. Montreal, Aug. 16, 1906, (Beaulieu). Mr. Chagnon informs me that the species which he has recorded as *cylindrica* is probably *scripta*, (A. G.).
383. *Pyritis montigena* Hunter. Innisfail, Alta., April 16, 1905, (Willing).
394. *Helophilus porcus* Walk. Montreal, June 10, 1906, (Beaulieu). New to Quebec province list.
401. *Brachypalpus rileyi* Will. St. Hilaire, Que., May 24, 1906, (Beaulieu). New to Quebec province list.
412. *Oncomyia loraria* Loew. Montreal, Aug. 19, 1906, (Beaulieu). New to Quebec province list.
423. *Alophora diversa* Coq. Montreal, Sept. 16, 1906, (Beaulieu). New to Quebec province list.
Alophora magnipennis John. St. Hilaire, Que., May 24, 1906, (Beaulieu). New to Quebec province list.
451. *Ocyptera dosiades* Walk. Aweme, Man., Aug. 17, (Criddle).
* *Linnæmyia anthracina* Thomp. Hymers, Ont., reared at Ottawa from larvæ of *Hyphoraia parthenos*, received from Mr. H. Dawson, (Gibson); Can. Ent., Aug., 1911, p. 266.
452. *Linnæmyia picta* Meig. Rigaud, Que., June 25, 1906, (Beaulieu). New to Quebec province list.
465. *Sturmia nigrita* Townsend. Rigaud, Que., June 25, 1906, (Beaulieu). New to Quebec province list.
484. *Peleteria ænea* Stæger. Calgary, Alta., July 10, 1903, (Willing).
488. *Echinomyia decisa* Walk. Saskatoon, Sask., Sept. 3, (Willing).
507. *Thelaira leucozona* Panzer. Montreal, Aug. 19, 1906, (Beaulieu). New to Quebec province list.
538. *Homalomyia flavibasis* Stein. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.
538. *Homalomyia incisurata* Zett. Montreal, Aug. 16, 1906, (Beaulieu). New to Quebec province list.
540. *Hyetodesia deleta* Stein. East Bolton, Que., July 28, (Winn). New to Quebec province list.
545. *Spilogaster obscurinervis* Stein. Montreal, June 14, 1906, (Beaulieu). New to Quebec province list.
549. *Anthomyia latitarsus* Zett. Montreal, Aug. 10, 1906, (Beaulieu). New to Quebec province list.
553. *Eustalomyia brixia* Walk. Montreal, (Beaulieu). New to Quebec province list.
553. *Eustalomyia vittipes* Zett. Montreal, June 3, 1906, (Beaulieu). New to Quebec province list.

560. *Cænosia calopyga* Loew. East Bolton, Que., July 22, (Winn). New to Quebec province list.
563. *Schoenomyza chrysostoma* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.
570. *Heteroneura melanostoma* Loew. Montreal, June 14, 1906, (Beaulieu). New to Quebec province list.
578. *Sciomyza obtusa* Fallen. Montreal, Aug. 18, 1906, (Beaulieu). New to Quebec province list.
581. *Sepedon fuscipennis* Loew. Montreal, July 22, 1906, (Beaulieu). New to Quebec province list.
581. *Sepedon pusillus* Loew. Montreal, April, 1906, (Beaulieu). New to Quebec province list.
582. *Lonchæa rufitarsus* Macq. Montreal, June 7, 1906, (Beaulieu). New to Quebec province list.
582. *Palloptera jucunda* Loew. Kaslo, B.C., Oct. 27, 1906; (Cockle).
585. *Sapromyza fraterna* Loew. Montreal, Aug. 16, 1906, (Beaulieu). New to Quebec province list.
585. *Sapromyza lupulina* Fab. Montreal, July 20, 1906, (Beaulieu). New to Quebec province list.
587. *Sapromyza vulgaris* Fitch. Montreal, July 16, 1906, (Beaulieu). New to Quebec province list.
597. *Chætopsis ænea* Wied. Aweme, Man., June 27-July 9, (Criddle).
616. *Calobata antennipes* Say. St. Johns, Que., July 1, 1907, (Beaulieu). New to Quebec province list.
619. *Nemopoda minuta* Wied. Montreal, Aug. 21, 1906, (Beaulieu). New to Quebec province list.
621. *Loxocera collaris* Loew. Montreal, Aug. 14, 1906, (Beaulieu). New to Quebec province list.
632. *Chlorops (Anthracophaga) sanguinolenta* Loew. Rouville, Que., May 24, 1906, (Beaulieu). New to Quebec province list.
633. *Chlorops melanocera* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.
635. *Eurina exilis* Coq. Montreal, July 14, 1906, (Beaulieu). New to Quebec province list.
637. *Oscinis decipiens* Loew. Kaslo, B.C., Sept. 1, 1907, (Cockle). The only locality record in Aldrich's catalogue is Sitka.
640. *Phortica leucostoma* Loew. Montreal, July 7, 1906, (Beaulieu). New to Quebec province list.
641. *Drosophila amœna* Loew. Montreal, Aug. 5, 1906, (Beaulieu). New to Quebec province list.
642. *Drosophila funebris* Fab. Montreal, Oct. 1, 1905, (Beaulieu). New to Quebec province list.
643. *Drosophila quinaria* Loew. Rigaud, Que., June 27, 1906, (Beaulieu). New to Quebec province list.
651. *Milichia indecora* Loew. Rigaud, Que., June 25, 1906, (Beaulieu). New to Quebec province list.
656. *Pseudolfersia maculata* Coq. St. Therese, Que., (Mignault). New to Quebec province list.

Hymenoptera.

In this Order, unfortunately, little definite work seems to have been done in Canada in 1911. Small collections made in previous years have been determined, and data regarding some of these are now included here. Dr. Wheeler has determined a number of different species of ants, records of some of which are also given.

Spalangera nigra Latr. Ottawa, Sept. 23, (Sanders).

Stenamma brevicorne Mayr. Weymouth, N.S., (Sanders).

Leptothoran curvispinosus Mayr. Weymouth, N.S., (Sanders).

Polichoderus plagiata Mayr. Grand Manan, N.B, (Sanders); Aweme, Man., 1907, (J. Fletcher).

Brachymyrmex heeri depilis Emery. Weymouth, N.S., (Sanders).

Lasius niger L., var *neoniger* Emery. Grand Manan, N.B.; Ottawa, (Sanders).

Lasius brevicornis Emery. Ottawa, (Sanders).

Lasius umbratus Nyl., subsp. *mixtus* Nyl. var. *aphidicola* Walsh. Ottawa, (Sanders).

Lasius umbratus Nyl., subsp. *subumbratus* Viereck. Beaver Lake and Olds, Alta., 1907, (Willing).

Formica sanguinea Latr. subsq. *subintegra* Emery. St. Stephen, N.B.; Ottawa, (Sanders).

Formica fusca L. var. *subsericea* Say. St. Stephen, N.B.; Ottawa, (Sanders).

Formica fusca L. var. *neoclara* Emery. Chilliwack Valley, B.C., (J. Macoun).

Formica lasioides Emery. var. *picea* Emery. Ottawa, (Sanders).

Formica subpolita Mayr. var. *neogagates* Emery. Ottawa, (Sanders).

Tiphia relativa Vier. Peachland, B.C., Aug. 2, 1909, (Wallis).

Specodes arroyanus Ckll. Lethbridge, Alta., (Wallis). Known from New Mexico and Colorado, (T.D.C.).

* *Tetralonia medicata* Ckll. Medicine Hat, Alta., May 30, 1904, (Willing); Can. Ent., Jan. 1911, p. 34.

* *Anthrophora bomboides willingi* Ckll., n. subsp. Prince Albert, Sask., June 18, 1905, (Willing).

* *Prosopis potens* Metz. Montreal, June 10, 1906; Trans. Amer. Ent. Soc. xxxvii, 104.

Osmia coloradensis Cress. Peachland, B.C., Aug. ?, 6, 1909, (Wallis).

Atanycolus montivagus Cress. Penticton, B.C., Aug. 12, 1909, (Wallis).

* *Pterochilus leucotaenius* Rohwer. Lethbridge, Alta., July 4, 9, 1909, (Wallis); Proc. U. S. N. M., vol. 40, p. 554.

* *Diodontus bidentatus* Rohwer. Nerepis, N.B., Aug. 20, (Leavitt). Proc. U. S. N. M., vol. 40, p. 561.

* *Hoplocampa xantha* Rohwer. Ottawa; Tech. series No. 20, part IV., U. S. Bureau of Entomology, p. 144.

* *Dimorphopteryx abnormis* Rohwer. Ottawa, 1900; Proc. U. S. N. M., vol. 41, p. 406.

Parnopes hageni Vier. Peachland, B.C., Aug. 23, 1909, (Wallis).

Bombus occidentalis Green. Fort Selkirk. Y.T., 1908, (Miss Seymour).

Psithyrus ashtoni Cress. Kenora, Ont., Sept. 9. 1909.

* *Psithyrus fernaldæ* Franklin. Kaslo, B.C.; Metlakatla.: Trans. Amer. Ent. Soc., xxxvii. 165.

* *Psithyrus tricolor* Franklin. Banff, Alta.; Metlakatla, B.C., (Keen); Weymouth, N.S., (P. G. Bolster); Trans. Amer. Ent. Soc. xxxvii, 167.

Order Hemiptera.

Unfortunately, as yet, we have few workers in Canada in this order. During the year Mr. J. B. Wallis, of Winnipeg, Man., and Mr. J. D. Evans, of Trenton, Ont., have had collections determined by Mr. Van Duzee, and some of these, together with some interesting species taken at Danville, Que., between July 20 to 30, 1911, and at North Hatley, Que., between July 17 to 24, 1909, by Mr. G. A. Moore, are included here. Miss Edith Patch, of the Agricultural Experiment Station, Orona, Maine, is now working on Psyllidæ and would be glad to receive any material from Canada. Below are also included definite records of a few of these latter insects which have been determined by Miss Patch.

Stictocephala inermis Fab. Treesbank, Man., July 18, 1910, (Wallis).
Telamona ampelopsidis Harr. Danville, Que., July, (Moore).
Cyrtobolus maculifrontis Emmons. Co. Hastings, Ont., July 2, (Evans).
Publilia modesta Uhler. Westbourne, Man., Sept. 4, 1910, (Wallis).
Cixius basalis Van D. Trenton, Ont., July 13, (Evans).
Laccocera vittipennis Van D. Danville, Que., July, (Moore).
Bruchmorpha tristis Stal. Treesbank, Man., July 21, 1910, (Wallis).
Aphelonema simplex Uhler. Treesbank, Man., July 21, 1910, (Wallis).
Pissonotus marginatus Van D. Danville, Que., July, (Moore).
Pissonotus ater Van D. Ottawa, July 17, 1904, (Metcalfe).
Liburnia campestris Van D. Danville, Que., July, (Moore).
Liburnia pellucida Fabr. Trenton, Ont., June 6; Aug. 6, (Evans).
Lepyronia gibbosa Ball. Treesbank, Man., July 21, 1910, (Wallis).
Aphrophora signoretti Fitch. Treesbank, Man., July 20, 1910, (Wallis); Meach Lake, Que., July 20, 1905, (Gibson).
Philaronia bilineata Say. Lethbridge, Alta., July 5, 1909; Treesbank, July 20, 1910, (Wallis).
Proconia costalis Fab. Treesbank, Man., April 17, 1908: Winnipeg, Man., May 18, 1909, (Wallis).
Dræculacephala manitobiana Ball. Husavick, Aug. 23, 1910, (Wallis).
Gypona cana Burm. Peachland, B.C., July 26, 1909, (Wallis).
Pediopsis basalis Van D. Co. Hastings, Ont., June 20, (Evans).
Idiocerus snowi G. & B. Treesbank, Man., July 21, 1910 (Wallis).
Athysanus lineola Fall. Trenton, Ont., June 20, (Evans).
Phlepsius nebulosus Van D. Husavick, Man., July 6, 1910, (Wallis).
Phlepsius decorus O. & B. Husavick, Man., Aug. 27, 1910, (Wallis).
Cicadula lineatifrons Stal. Husavick, Man., Aug. 23, 1910, (Wallis).
Empoasca atrolabes Gill. Co. Hastings, Ont., June 20, (Evans).
Livia vernalis Fitch. Aylmer, Que., May 31, 1903, (Metcalfe).
Livia maculipennis Fitch. Brockville, Ont., Sept. 20, 1903, (Metcalfe).
Aphalara metzaria Crawford. Aylmer, Que., May 31, 1903, (Metcalfe).
Aphalara veaziei Patch. Hull, Que., July 26, 1903, (Metcalfe).
Psylla floccosa Patch. Ottawa, July 12, 1903; Hull, Que., Aug. 1, 1904, (Metcalfe).

Psylla galeaformis Patch. Ottawa, July 12, 1903; Aug. 2, 24, 1904; June 26, 1904; Hull, Que., Aug. 1, 1904, (Metcalfe.)
Psylla striata Patch. Ottawa, on ironwood, Aug. 25, 1907; on basswood, July 1, 1904; Hull, Que., on maple, Aug. 1, 1904, (Metcalfe).
Trioza obtusa Patch. Brockville, Ont., Oct. 11, 25, 1903, (Metcalfe).
Banasa sordida Uhler. Co. Hastings, Ont., Aug. 27, (Evans).
Thyreocoris nitiduloides Wolff. North Hatley, Que., July, 1909, (Moore).
Aradus quadrilineatus Say. Winnipeg, Man., May 18, 1909, (Wallis).
Sphragisticus nebulosus Fall. Winnipeg, Man., May 17, 1909, (Wallis).
Emblethis vicarius Horv. Treesbank, Man., July 26, 1910 (Wallis).
Scolopostethus atlanticus Horv. Winnipeg, Man., May 13, 1909, (Wallis).
Corynocoris distinctus Dallas. Grimsby, Ont., Sept. 16, 1894, (Metcalfe).
Megalotomus quinquespinosus Say. Aylmer, Que., Aug. 21, 1910, (Metcalfe).
Corizus crassicornis L. Treesbank, Man., July 21, 1910, (Wallis).
Leptoypha mutica Say. North Hatley, Que., July, 1909, (Moore).
Pagasa fusca Stein. Winnipeg Beach, Man., Aug. 25, 1910, (Wallis).
Reduviolus propinquus Reut. Husavick, Man., July 11, 1910, (Wallis).
Nœogeus burmeisteri L. & S. Treesbank, Man., July 25, 1910. (Wallis).
Mesovelia mulsanti White. Husavick, Man., July 12, 1910. (Wallis).
Triphleps tristicolor B. White. Peachland, B.C., July 24, 1909, (Wallis).
Anthocoris borealis Dallas. North Hatley, Que., July, (Moore).
Anthocoris melanocerus Reut. Peachland, B.C., July 24, 1909, (Wallis).
Anthocoris musculus Say. Danville, Que., July, (Moore).
Orthotylus congrex Uhler. Co. Hastings, Ont., June 14, 20, (Evans).
Orthotylus marginatus Uhler. Co. Hastings, Ont., June 20, (Evans).
Dicyphus californicus Stal. Trenton, Ont., Aug. 20, (Evans).
Fulvius brunneus Prov. Trenton, Aug. 10, (Evans).
Stenotus binotatus Fabr. Trenton, Ont., June 26, (Evans).
Hadronema picta Uhler. Lethbridge, Alta., June 6, 1909, (Wallis).
Resthenia insignis Say. Danville, Que., July, (Moore).
Dichrooscytus suspectus Reut. Husavick, Man., July 10, 1910, (Wallis).
Lygus plagiatus Uhler. Winnipeg, Man., Sept. 4, 1909, (Wallis).
Tropidosteptes commissuralis Reut. Hull, Que., Aug. 14, 1904, (Metcalfe).
Tropidosteptes amœmus Uhler. Husavick, Man., July 11, 1910, (Wallis).
Camptobrochis validus Reut. Peachland, B.C., Aug. 5, 1909, (Wallis).
Horcias dislocatus Say, var. *affinis* Reut. Ottawa, May 13, (Metcalfe).
Mimiceps gracilis Uhler. Carlsbad Springs, Ont., June 26, 1904, macropterous form, (Metcalfe).
Salda interstitialis Say. Winnipeg, Man., May 20, 1910, (Wallis); North Hatley, Que., July, 1909, (Moore).
Salda littoralis L. Husavick, Man., July 3, 1910, (Wallis).

Neuropteroid Insects (Except Odonata).

(Arranged according to a catalogue of the Neuropteroid Insects, (Except Odonata), of the United States, by Nathan Banks; American Entomological Society, 1907. The numbers refer to the pages of the catalogue).

All of the species mentioned below have been determined by Dr. Banks. Some, it will be noticed, are of not uncommon occurrence and even widespread distribution,

but it has been thought advisable to include them all here as our knowledge of the distribution of these neuropteroid insects is very limited and almost any definite record is of value. With but few exceptions none of the species here mentioned have been recorded in the RECORD. The few previously mentioned are from widely separated localities.

ORDER ARCHIPTERA.

13. *Isoperla bilineata* Say. Winnipeg, Man., May 29, 1908, (Wallis).
16. *Ephemera decora* Walk. Husavick. Man., July 10, 1910. (Wallis).
16. *Ephemera simulans* Walk. Go Home Bay, Ont., late June and early July, (Walker).
17. *Cœnis dimuta* Walk. Go Home Bay. Ont., July 4—Aug. 10, 1908, (Walker).
18. *Callibœtis ferrugineus* Walsh. Husavick, Man., Aug. 16, 1910. (Wallis).
20. *Heptagenia canadensis* Walk. Husavick, Man., July 2, 1910. (Wallis).
20. *Heptagenia flavescens* Walsh. Peachland, B.C., Aug. 23, 1909. (Wallis).
20. *Heptagenia interpunctata* Say. Go Home Bay. Ont., June 29, 1908, (Walker).
20. *Heptagenia luridipennis* Burm. Go Home Bay, Ont., June 26—Aug., 1908, (Walker).
20. *Bœtisca obesa* Say. Go Home Bay, Ont., June 27, 1907, (Walker).

ORDER NEUROPTERA.

21. *Chauliodes serricornis* Say. Ottawa, Aug. 1910, (Bro. Germain).
27. *Chrysopa majuscula* Banks. Penticton, B.C., Aug. 12, 1909, (Wallis).
27. *Chrysopa nigricornis* Burm. Husavick, Man., Aug. 16, 1910. (Wallis).
28. *Chrysopa ypsilon* Fitch. Winnipeg, Man., June 10, 1910, (Wallis).
* *Chrysopa canadensis* Banks. Go Home Bay, Ont., July 12, (Walker); Trans. Amer. Ent. Soc., xxxvii, 340.
30. *Brachynemurus abdominalis* Say. Aweme, Man., July 18, 1910, (Wallis); Go Home Bay, Ont., July 31, 1907, (Walker).
31. *Brachynemurus brunneus* Currie. Aweme, Man., July 20, 1910, (Wallis).
31. *Brachynemurus nigrilabris* Hagen. Aweme, Man., July 20, 1910, (Wallis).
32. *Cyrptoleon nebulosum* Oliv. Giant's Tomb Island, Georgian Bay, July 7-30, 1907, (Walker).

ORDER TRICHOPTERA.

35. *Phryganea cinerea* Walk. Go Home Bay. Ont.. (Walker).
35. *Neuronia postica* Walk. Go Home Bay, Ont., (Walker).
35. *Neuronia pardalis* Walk. Hymers, Ont., June 16, 1910., (Dawson).
35. *Agrypnia straminea* Hagen. Winnipeg. Man., June 1, 1908, (Wallis).
36. *Limnephilus externus* Hagen. Winnipeg, Man., Sept. 13, 1910, (Wallis).
36. *Limnephilus indivisus* Walk. Temagami, Sept. 14, 1908, (Walker).
*. *Rhyacophila grandis* Banks. Vernon, B.C., and Bon Accord, B.C., June 14, (Russell); Trans. Amer. Ent. Soc., xxxvii, 351.
42. *Brachycentrus incanus* Hagen. Winnipeg. Man., May 31. 1910, (Wallis).
43. *Helicopsyche borealis* Hagen. Husavick, Man., Aug. 4. 1910, (Wallis).
Lepidostoma wisconsinensis Vorhies. Husavick, Man., July 2, 1910, (Wallis).

45. *Molanna cinerea* Hagen. Go Home Bay, Ont., June 28-July 12, 1908, (Walker).
45. *Molanna rufa* Hagen. Husavick, Man., July 2, 1910, (Wallis).
45. *Leptocerus resurgens* Walk. Go Home Bay, Ont., July 4, 12, 1907, (Walker).
45. *Triænodes borealis* Banks. Husavick, Man., July 2, 1910, (Willis).
45. *Triænodes ignita* Walk. Treesbank, Man., July 29, 1910, (Willis).
45. *Leptocella albida* Walk. Winnipeg, Man., June 29, 1909, (Wallis).
46. *Leptocella uwarowii* Kolen. Husavick, Man., Aug. 23, 1910, (Wallis).
46. *Œcetina incerta* Walk. Husavick, Man., July 4, 1910, (Wallis); Go Home Bay, Ont., July 12, 22, 1908, (Walker).
47. *Macronema zebrata* Hagen. Sandy Gray Falls, Musquash River, Ont., July 24, 1907, (Walker).
47. *Hydropsyche alternans* Walk. Winnipeg, Man., June 3, 1910, (Wallis).
47. *Plectrocnemia confusus* Hagen. Go Home Bay, Ont., June 27-July 5, 1907, (Walker).
*. *Polycentropus remotus* Banks. Peachland, B.C., July 23, (Wallis); Trans. Amer. Ent. Soc. xxxvii, 359.
48. *Nyctiophylax affinis* Banks. Go Home Bay, Ont., July 5-22, 1907. (Walker).
*. *Nyctiophylax mœstus* Banks. Peachland, B.C., Aug. 19, (Wallis); Trans. Amer. Ent. Soc., xxxvii, 359.

Odonata.

Dr. E. M. Walker of Toronto, has sent to me the following interesting records which I am glad to include.

Amphiagrion saucium Burm. Aweme, Man., June, 1911, 1 female, teneral, (Wallis). First Manitoba record.

Hagenius brevistylus Selys. Mississauga River, Parry Sound Dist., Aug. 2, 1911, 1 male, (Hahn).

Ophiogomphus rupinsulensis Walsh. Shawniga River, Parry Sound Dist., Ont., Aug. 10, 1910, (Hahn). At the same locality Mr. Hahn also obtained a number of exuviæ of an *Ophiogomphus*, probably belonging to the same species.

Ophiogomphus severus Hag. Aweme, Man., July 19, 1910, (Wallis). Two females, probably of this species.

Gomphus externus Hag. Winnipeg, Man., June 25, 1910, 3 males, 1 female, (Wallis).

Gomphus lividus Selys. Shawniga River, Parry Sound Dist., Aug. 10, 1910. A number of exuviæ, (Hahn).

Gomphus scudderi Selys. Mississauga River, Parry Sound Dist., Aug. 2, 1911. 1 male, (Hahn).

Dromogomphus spinosus Selys. Mississauga River, Parry Sound Dist., Aug. 2, 1911, 1 male, (Hahn).

Basiaeschna janata Say. Shawniga River, Parry Sound Dist., Aug. 10, 1911. Several exuviæ, (Hahn).

Boyeria vinosa Say. Shawniga River, Aug. 10, 1911. 1 male, 1 female, (Hahn).

A number of *Boyeria* exuviæ were also taken at this locality, and are separable into two slightly differing forms, one of which is identical with the exuvia of *B. grafiana,* so that the other doubtless belongs to *vinosa.*

Aeshna eremita Scudd. Shawniga River, Aug. 10, 1911, 2 exuviæ, (Hahn).

Aeshna interrupta Walk. Mississauga River, Aug. 2, 1911, 3 males, 1 female, (Hahn).

Neurocordulia yamaskanensis Prov. Shawniga River, Aug. 10, 1911, numerous exuviæ, (Hahn).

Helocordulia uhleri Selys. Shawniga River, Aug. 10, 1911, 1 exuvia, (Hahn).

Somatochlora macrotona Wmsn. Winnipeg, June 10-19, 1910; 3 males, 2 females; Husavick, Man., Aug. 17, 1910, 1 female, (Wallis).

Libellula pulchella Drury. Husavick, Man., July 11, 1910, (Wallis). Most northwesterly record.

Pantala hymenæa Say. Husavick, Man., July 11, 1910, 1 male, (Wallis). First Canadian Record.

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ANNUAL REPORT

OF THE

Bee-Keepers' Association

OF THE

Province of Ontario

1911

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
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29-37 Richmond Street West,
TORONTO.

To His Honour Sir John Morison Gibson, Knight Commander of the Most Distinguished Order of St. Michael and St. George, a Colonel in the Militia of Canada, etc., etc., etc.,

Lieutenant-Governor of the Province of Ontario

May it Please Your Honour:

I have the pleasure to present herewith for the consideration of Your Honour, the Report of the Ontario Bee-keepers' Association for 1911.

Respectfully submitted,

JAMES S. DUFF,

Minister of Agriculture.

Toronto, 1912.

Ontario Bee-Keepers' Association.

Officers for 1912.

President—D. Nolan, Newton Robinson.
1st Vice-President—J. W. Byer, Mount Joy.
2nd Vice-President—Miss E. Robson, Ilderton.
Secretary-Treasurer—P. W. Hodgetts, Parliament Buildings, Toronto.

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Committees:

Revising Committee—Mr. Sibbald, Mr. Pettit.
Honey Crop Committee—Mr. Couse, Mr. Craig, Mr. Sibbald.
Representatives to Horticultural Exhibition—Mr. Nolan, Mr. Couse, Mr. Grainger, Mr. Sibbald, and the Secretary.
Transportation Committee—J. D. Evans, the President and the Secretary.

Representatives to Fair Boards.

Representative for Toronto Exhibition—J. D. Evans, Islington.
Representative for Ottawa Exhibition—W. J. Brown, Chard.
Representative for London Exhibition—E. T. Bainard, Lambeth.

Treasurer's Report.

Receipts.		Expenditures.	
Balance on hand	$101 12	Grants to Associations	$162 50
Membership fees	262 00	Expenses for Convention	179 50
Affiliated Societies' dues	60 00	Periodicals	329 00
Entry fees, Horticultural Exhibition	2 30	Printing	36 15
Grant	500 00	Revising Report	7 00
Incidentals	65	Incidentals	22 77
		Balance on hand	189 15
	$926 07		$926 07

W. J. Craig,
President

P. W. Hodgetts,
Treasurer.

Audited and found correct,

D. T. Cashman,
Auditor.

ONTARIO BEE-KEEPERS' ASSOCIATION.

The annual meeting of the Ontario Bee-Keepers' Association was held in the County Council Chambers in the City of Toronto, on Wednesday, Thursday, and Friday, November 15th, 16th, and 17th, 1911.

On Wednesday at two o'clock p.m., the President, Mr. W. J. Craig, of Brantford, took the chair, and after calling the meeting to order, delivered a few words of welcome.

DENIS NOLAN, Newton Robinson, 1st Vice-President, in replying, said:—"I am sure the address that has been delivered by our worthy President, Mr. Craig, has not left very much ground to be covered in regard to work of the Association. With regard to the season, Mr. Craig, perhaps, has not been as actively engaged in bee-keeping as some of the rest of us. You all know, of course, what the season was so far as this locality is concerned. Generally over the Province I think it was somewhat disappointing. The early part of the season was cold and wet and the bees did not build up so rapidly as you might expect, not so rapidly as they should have before the clover and other plants came along. The weather turned rather warm, and it takes so long for the bees to hatch out a batch of brood to prepare for this, that some of us were a little behind, particularly in the north country. Fortunately for the bee-keeper, and perhaps unfortunately for the farmer, a great deal of the fall wheat in the northern part of Ontario was killed, and for that reason buckwheat was sown, and we reaped a great harvest of buckwheat honey. After having almost a failure in white honey, this came in very nicely. It was a great source of satisfaction to me when I bought the usual amount of sugar, and found I had quite a few sacks left afterwards and my bees were in better shape in regard to stores for winter than I ever had them before.

In regard to bee diseases, Mr. Craig mentioned about inspection work. We are told of the inroads of European Foul Brood. Those of us who have not had experience with it know very little about it, but we are warned and I think we should accept this warning and be prepared. To be forewarned is to be forearmed.

There used to be a slogan that people should keep more bees. I think that should be changed and they should say, keep better bees and also keep bees better. Keep the best strain of bees you can get. It is not an easy matter to have all these things; it means quite a lot of work and quite an effort on your part, but I think it would pay well in the end.

Regarding the honey market in the past year, I think it has been very satisfactory. I think we have secured as good a price, if not a better price for white honey than we ever did before. The price set by the Committee, I think, was asked by everybody. It was quite satisfactory to me, and everybody that had confidence in the Committee asked that price and succeeded in getting it.

With regard to local associations, I noticed that there have been several local associations affiliated this year. I judge this by the amount of money on hand. At least, if there were not more associations affiliated this year than before it was a poor year for the grant of the local associations. No doubt these associations becoming organized and affiliated is due to the Provincial Apiarist and the work that is taken up by the Department.

I anticipate a good meeting. We have an excellent attendance here and we have good encouragement, and I think we will all be well satisfied with our convention.

The Committee on Resolutions was appointed as follows:—J. D. Evans, W. Couse, and M. B. Holmes.

FEDERAL FOUL BROOD LEGISLATION.

C. G. Hewitt, Dominion Entomologist, Ottawa.

The reason I wanted to speak to you this afternoon was not so much to address you but to get the opinions of this meeting with regard to the foul brood situation in Ontario, and also your ideas with regard to what the Federal Government should do if the Federal Government decides to introduce legislation in regard to the foul brood situation.

In this regard I might say that I had the pleasure of addressing, the other week, the Bee-Keepers' Association of the Province of Quebec, and we discussed this foul brood situation, and they passed an unanimous resolution in favour of the Federal Government passing foul brood legislation. And there is an extremely big question, and one which I think should be very carefully considered before anything is done. I am not one who believes in hastily conceived legislation, but I think it should be conceived in a proper spirit with due regard to the different provinces whom it would concern; and not only that but with due regard to those whose welfare it is endeavoring to ameliorate, and for that purpose I do not wish so much this afternoon to address you, because I know only too well how well acquainted you all are with the foul brood situation in Ontario, especially with the rapid spread of European Foul Brood which I think is the chief thing we should consider. I want more particularly to get your ideas. In the first place I want to get your own experience with regard to the spread of foul brood, especially European Foul Brood, in your own localities within the last year or two, because in considering this question we should have some idea as to the seriousness of the situation in the different provinces. Further I should like your ideas with regard to what you think, if the Federal Government contemplated legislation of this kind, should be its scope. I might say as a guide to the discussion that the Federal Government, if legislation were passed, would not in any way interfere with or duplicate the admirable legislation which although admirable I still think might be improved, which you have in the Province. It would concern itself chiefly with the question as relating to the inter-provincial aspect, and also as relating to the importation of the disease from without. We have a certain amount of evidence, and I should like to have more evidence if any members here know of it of the importation of diseased stocks from without Canada into different provinces. We have also a certain amount of information with regard to the importation of the disease from one Province to another, and that is the most important aspect. To give you an instance, suppose a bee-keeper who has the disease in his apiary suddenly decides he will leave Ontario and go into one of the western Provinces. He takes his stocks along with him and introduces in that

manner the disease into one of the newer Provinces, into a locality where probably for hundreds of miles around there is no disease. That, I think, is a thing which should be prevented. Not only that. I think we should prevent so far as is possible the introduction of the disease into Canada. We have here my friend, Dr. Phillips, who has charge of apiculture in the United States, and I do not want to say before his face that we have had the disease introduced into Canada from the United States. We have a certain amount of evidence I think that that has happened, but I think it would have come anyway, and Dr. Phillips, of course, has no means of preventing it. But still we do want to prevent it so far as it is possible. We have, I think, according to Dr. Phillips' latest bulletin, the disease present in all the States along the Canadian frontier, and we know that the number of Americans who are coming into Canada is increasing annually, and we know some of those Americans will bring their bees with them, as many of them are very fond of bee-keeping, and in that way there is a possibility I see, and I think Dr. Phillips will agree, of the disease entering Canada. In the same way as our immigration department does, we should be assured that those bees are healthy, and we should turn back undesirable immigrants in the way of diseased colonies of bees. That, briefly, is the manner in which I think we might view this question. I am not here to lay before you any definite plans, I am simply here to gather opinions and get an expression of opinion from you individually and from you as an association.

THE PRESIDENT: Now, we will be glad to hear from any in the Association that have any experience along the line spoken of by Dr. Hewitt. There are certain points he has taken up here, and it will be well if they were considered. His idea, of course, is just to find out what the feeling of the bee-keepers is along this line.

MR. CHRYSLER: It seems to me we are not in shape to answer his question as fully as we should without some consideration and discussion. I think we could endorse anything that the Federal Government might put forward as a measure for the prohibitory importation of diseased colonies of bees. I do not know whether we could give him a decided answer before he left or not.

MR. PETTIT: This matter of Federal Legislation in reference to the diseases of bees came up a year ago last summer. I think it was then we began to think pretty seriously when we received word that some diseased bees had been brought from Buffalo to Fort Erie, and it was really impressed on us, at that time, that such legislation would be an advantage. The Foul Brood Act, which we have in Ontario is, of course, only active for Ontario, and there is no way in which we could have our Ontario Act amended or improved to cover these points. Again, there are Dr. Hewitt's suggestions of bringing bees from one Province to another. British Columbia passed recently a Foul Brood Act, which was copied very much after the Ontario Act; but, in addition to our points, they have incorporated a clause which enables them to safeguard themselves against the importation of diseased bees in the Province. The British Columbia people think they have no foul brood at the present time. I think they are right in this, and they want to keep themselves clear and have taken this action. Now it would be a good thing for Ontario if we had the same clause in our Act. But at the same time we have no means of preventing bees from adjoining Provinces or adjoining countries flying across the line, and this refers particularly to adjoining Provinces. We had an illustration of this in the case of European Foul Brood at Ottawa, and we feel pretty sure that a great deal of the disease, which we have at Ottawa, come across the line from Quebec. The Quebec

people are going after it now, but the damage is done. Now, in the case of things like this happening in the future, it would be of benefit to us if we had Dominion legislation whereby an inspector could be sent immediately to special cases. In our inspection work here in Ontario, sometimes, for some reason, the local inspector is unable to attend to special cases, or there is a case in dispute or something needing an outside man; we can immediately send a provincial inspector to any part of Ontario. It would be a good thing if the Dominion Government had the same power of sending an inspector direct to any part of the Dominion, and to cover that point, of course, Dominion legislation would be necessary. So there are these points of having Dominion supervision, possibly irrespective of Provincial lines, not taking from us any of the powers which we have, but covering points that the Provincial Government cannot cover very well. We have that, and we have also the matter of shipping bees from one Province to another. Another point which some might suggest is the matter of shipping honey from one Province to another. I am not recommending that. I am just mentioning that some have claimed that there should be legislation covering this point, prohibiting the shipping of diseased honey, or honey from diseased apiaries, from one part to another. Of course these points could be covered by Dominion legislation in a way that Provincial legislation could not touch.

Dr. HEWITT: The clause in the British Columbia Act which was passed last March, to which Mr. Pettit referred, concerning the question of the importation of diseased bees into British Columbia, I have here, and probably the members of the Association would like to hear what it is like. Section 12 of their Act: "The Minister shall have power to order into quarantine at the point of entry of the Province of British Columbia or such other place as he may appoint for a period of not more than nine months, and if found to be infested may order to be destroyed any or all bees imported into the Province of British Columbia, also to order the disinfection of all bee appliances which have been used; also to order the destruction by fire of all combs and frames in empty hives."

The question of honey which Mr. Pettit has raised is a very serious one, but at the same time it is such a big one that I do not think we could deal with it successfully by legislation. The British Columbia people took the matter up with me and asked whether it would be possible to deal with this question of importing diseased honey by Federal legislation, but I hardly thought it was. All bee-keepers here know what an enormous subject it is, and how it would affect trade, and how we should have up against it all the confectioners and all such interests, and I think we should do more harm than good by the setback it would give us in opposing our measures.

Mr. MCEVOY: Speaking of shipping and selling diseased honey, it is nothing at all in comparison with the queens. That is what is bringing in the disease. The queen herself cannot give the disease, but it is the food that is in these cages. There is more disease brought in and distributed through queens than in any other way at the present day. Speaking of Italianizing to get rid of black brood: Italians will get rid of it and they will clean it out. I would not like to see a quarantine on queens, because they are really necessary; but, let a man know what he is doing. The queen herself cannot give it.

Mr. EVANS: I think that clause can hardly be worked from a Dominion point of view. I think the inspection should be more like the system under which trees are inspected. All trees coming into this country have to be inspected at the border by some official who understands the disease, and if they are not correct they cannot

come in; they have to be fumigated. You couldn't very well fumigate the bees, as that would spoil the queens; but I think it would be better if all hives of bees coming into the country were inspected, and if not healthy they should not be allowed to come in. As to the queens, I think there should be a certificate from some official in the country certifying that the apiary from which they came is free from all disease. I do not think we can manage anything as to the honey; that at present seems to be impracticable. I think we should have a more energetic system of getting rid of this European foul brood either by the Dominion or the Province. There should be officials authorized to investigate and to destroy if necessary, and they should do it. Of course the inspectors now have power to do that, but I do not think they very often do it.

Mr. McEvoy: The law is against the harboring, keeping or exposing. They are not allowed to keep them. How can they sell them if they are looked after, if that is so.

Mr. Herschiser: Lest an incorrect impression might be entertained in relation to the importation of foul brood from the United States across the Niagara River I want to relate exactly what there is regarding it. There were some bees brought over to Fort Erie from the United States by a person who had some experience in keeping bees. He was an Englishman; he had had some experience with Mr. J. B. Hall, and then kept bees in the United States awhile. He had some colonies with foul brood, and moved them over to Fort Erie, and I think they are all dead. I think they died last winter. He is now back in the United States again. He is not a naturalized citizen, so I do not think the claim against the United States of importing bees into Canada is well founded. That is all there is that I know of, and I have kept watch, and I have tried to work in harmony with the authorities on foul brood in Canada to keep the disease from spreading. If I am correctly informed the disease was across the border before these bees were moved over. It had got quite a foothold on Grand Island, and I think it was carried across the river by the bees themselves. I do not think any legislation will prevent the bees from flying back and forward.

In relation to the dissemination of the disease by the purchase of queens, I think that that matter can be satisfactorily met by having proper regulations for the introduction of queens. If the queens are required to be taken out of the cage and introduced in some other method than by the candy method I think all the conditions will be met in that regard.

Mr. Timber: I think almost all of us will agree that there are many instances where the disease has been introduced into Canada by the cage that the queens come in. I think legislation could easily be enacted that would stop that, by somebody inspecting the queens as they come across the border and changing the queens from one cage to another, and by burning the cage she came in and letting the queen go on to her destination in a clean cage.

Mr. Byer: I have no doubt this subject is of importance to all of us, and I think Dr. Hewitt wants something practicable to take with him back to Ottawa. I feel that at this first session he will hardly get what he is looking for. The convention is young. I would suggest that the discussion be laid over for the present. We have two whole sessions taken up with foul brood, and it appears to me if we have time to consider this we will be in a position to give Dr. Hewitt something that will be of some help to him.

Mr. Holmes: Answering Mr. Herschiser, there was an instance which came under my own observation in reference to the importation of bees or the bringing of

bees into Ontario. I happened to observe a yard of bees that were brought from Indiana into a county quite a distance east from here—about 80 colonies of bees—in which it was quite evident the disease of American foul brood was existing. At a little later date, the following year I learned that yard of bees had been again moved. I do not know whether they were returned to Indiana or moved to some other part of Ontario or Canada.

MR. PETTIT: I think the proposition Mr. Timbers made was just about as practical as the plan that the British Columbia people have of putting bees in quarantine for nine months. I do not think they would be worth very much after that time. The way to cover that point would be to require a certificate of health from some authorized inspector at the point they were coming from, and if they were coming from a point in the Dominion where there was no authorized inspector that would be a point for the Dominion inspector to cover, but this matter of inspecting at the line is not practical or possible.

Mr. HERSCHISER: It seems to me there is something practical about Mr. Timbers' suggestion. I understand that such a regulation exists in the Island of Jamaica, that all queens introduced into that island are required to be taken from their cages and introduced into other cages before they are allowed to land. It does not seem to me it is such a great undertaking at the ports of Ontario. It would require only one or two persons to do that, and it seems to me it would be a good thing.

Dr. HEWITT: I should like to ask the last speaker who would be the official to do this queen moving?

Mr. HERSCHISER: You would want people qualified to handle bees.

Dr. HEWITT: I think the custom officials at the ports of entry would not be willing to undertake the task.

MR. HERSCHISER: It does not seem to me that it would be impossible to employ as a customs clerk a bee-keeper who is competent to do that work.

Dr. HEWITT: When you think what that would involve at all the ports of entry you can see what an enormous business it would be. I have the same difficulty now in regard to the Insect and Pest Act in which we inspect all plants and trees coming into Canada, and it has been constantly said by the horticultural people that the customs people should have a knowledge of horticulture. If you are going to have horticultural people and bee-keepers as customs officials you would have a peculiar condition of affairs.

Mr. HERSCHISER: If the advantage to be obtained either from a greater amount of honey produced or a greater amount of fruit produced is sufficient to warrant it, then it is a good thing. These customs officers, perhaps, are employed in a good many lines of inspection that hardly pay, but here is a place where it seems to me it would pay.

Dr. HEWITT: That would have to be considered. I quite agree with the importance of that aspect of the question, and the danger which arises by the introduction of the disease by means of queens. One of the chief methods which would probably be adopted and which seems to me feasible would be to have a certificate of health; either to have the bees inspected when they arrived in Canada, or to make it necessary that the bees should be accompanied by a certificate from the state entomologist or the state official from which they come, certifying they are free from the disease, and prohibiting the entering of bees without that. Even that brings a difficulty. In the countries from which we import trees and other vegetation they have systems of nursery inspection, and this stock when it is shipped out

of that state or country is supposed to bear a certificate from the state or government official showing that that stock is free from insect pests. We do not accept those certificates, for the reason that we have constantly found insect pests in shipments which bear certificates saying they are free from disease. If that is the case in nursery stock, vegetation and trees I am rather afraid it would sometimes be the case with bees where we left it to the certificate of the state or government authority from which the bees were being shipped, and, therefore, I think we could only do it by inspection at this end.—that is, if we could not trust the people from whom the bees were coming.

Mr. HERSCHISER: I do not believe inspection of bees as they enter a country or a Province is any guarantee they have not the disease. I think it is necessary in addition to that to quarantine them, because I have known colonies or yards of bees under my own observation that have been apparently healthy and a few weeks afterwards the disease would appear. If those were inspected at the time they might be passed and the disease might be present just as it is in the nursery stock, but by recaging the queens that would do away with any possibility of the disease.

Dr. HEWITT: Do you think it would be safe to rely on any certificate from the state entomologist or the state official that the apiary from which they came was free from disease.

Mr. HERSCHISER: No; I do not think it would.

Mr. LOWEY: I would suggest that the man receiving the queens should make the change.

Mr. HERSCHISER: That would be a good practical thing if they would do it.

Mr. G. B. HOWE (New York State): In Jamaica, in shipping queens, they all go through a certain inspector. He not only changes the queens into clean cages, but he changes the attendants. He destroys the attendants, and then he ships the queens on to the parties they go to. No queen should be shipped into a country except through one inspector.

Mr. BYER moved, seconded by Mr. LAING, that a Committee be appointed to take this matter up, and make recommendations. Carried.

THE COUNTY BEE-KEEPERS' ASSOCIATIONS AND THEIR WORK.

MORLEY PETTIT, PROVINCIAL APIARIST, GUELPH.

In speaking of County Bee-Keepers' Associations and their work it will be of interest to have first of all a brief historical sketch of the organizations which have had their part in making bee-keeping what it is in Ontario to-day. In preparing this sketch recourse has been had to the early records of the societies concerned, where such were available, and to the then current volumes of the *Canadian Bee Journal* and the *American Bee Journal*, also the reports of the Ontario Bee-keepers' Association. Unfortunately none of these sources give complete reports, and it is to be hoped that any who are able, from memory or otherwise, to correct the statements given will correspond with the writer.

We have no record of bee-keepers' meetings in Ontario previous to 1880, when "On Tuesday afternoon the 14th inst. (August) about sixty bee-keepers represent-

ing all sections of the Province and several from the United States and Manitoba, met in the City Hall, Toronto, Mr. R. McKnight, of Owen Sound, in the chair, and Mr. Greenslade, of Toronto, Secretary.

"The chairman, after briefly acknowledging the honor conferred upon him, referred to the necessity of a Canadian Bee-keepers' Association through which the freest interchange of thought and experience in reference to this important industry could be had. There was sufficient indication given of the capabilities of honey production in Ontario in the case of Mr. Jones whose apiary yielded 70,000 pounds of honey per annum, gathered from a single township. He hoped they would endeavor to get as much practical information as possible during the meetings of the Convention pertaining to apiculture and the marketing of bee products.

"On motion, a committee was appointed to draft a constitution for the Association.

A constitution was drawn up and the following officers elected:President, D. A. Jones, Beeton; Vice-Presidents, Dr. Shaver, Stratford, and Hon. Lewis Wallbridge, Belleville; Sec-Treasurer, R. McKnight, Owen Sound; Executive Com., F. Webster, Toronto, W. F. Clark, Listowel, J. G. A. Wallace, Brighton, J. B. Hall, Woodstock, Dr. Duncan, Embro.

The duty of filling up the list of county representatives was left to the Executive Committee, as was also the duty of drafting a set of by-laws.

Mr. D. A. Jones and W. F. Clark were appointed delegates to the Convention of the National Bee-keepers' Association to be held in Cincinnati. (A. B. J. Vol. XVI 1880 P. 509.)

The name of this Association was soon changed to the Ontario Bee-keepers Association. Annual conventions have been held continuously since the first meeting in 1880.

Probably the next oldest association in Ontario is the Norfolk County Association. In fact I do not know which is the older of the two. The first report we have of it is in A. B. J. Vol. XX. 1884, p. 442. This was the fourteenth regular meeting and was held June 7th, at Simcoe, with President Moses Kitchen in the chair. Elias Clouse was Secretary. After some practical discussions the meeting adjourned to meet again September 6th. One would infer that meetings were held quarterly, and this would date the first meeting in March, 1881.

This old Association has thrived and done much for bee-keeping, not only in Norfolk, but also in the whole of Ontario, particularly in the matter of getting increased inspection of apiaries. It is alive and well at the present day.

The next Association to be formed was the Haldimand County Association, which was organized in 1882. The second meeting is reported in A. B. J. Vol. VIII., 1882, p. 729. The following is taken from this report:—

"A meeting of the Haldimand Bee-keepers' Association was held at Cayuga, Ont., on Friday, October 27th, 1882, at 1 o'clock p.m., the President, E. Decew, Esq., in the chair. The President explained the object of the meeting, viz., the adoption of a constitution for the Association, and the election of additional officers The constitution was adopted fixing an annual fee of fifty cents for membership."

Methods of management were discussed and township representatives elected. E. C. Campbell was the Secretary, and proved the best reporting secretary of early times.

There seems to be no break in the continuity of this society from the first to the present time, and several of the first members are still active workers.

In 1883, the eastern bee-keepers got together and formed the Bay of Quinte Bee-keepers' Association. Their organizing meeting at Trenton in October of that year is well reported in A. B. J. Vol. XIX., 1883, p. 640. P. C. Dempsey was elected President and J. H. Peck, Secretary. This Association seems to have thrived for about six years, meeting in various towns in the district. But in 1888 there was a very poor season, and the meeting in Belleville was "small but representative." (C. B. J. Vol. IV., p. 571.) The Bay of Quinte Association is not heard from again.

A Hamilton District Association is also reported as having met on November 10th, 1883, W. J. Whitfield, Dundas, President, and A. Robertson, Carlyle, Secretary. After discussion of methods of management the Convention adjourned to meet again April 13th, 1884. (A. B. J. Vol. XIX., 1883, p. 608.) If they did meet again there is no record of it.

In 1884 Middlesex bee-keepers organized as follows:—

"A meeting of prominent bee-keepers was held at Ailsa Craig last week, for the purpose of forming an Association to advance their mutual interests, and discuss matters pertaining to the keeping of bees. An organization was effected with the following officers: President, Mr. Campbell, of Parkhill; Vice-President, Mr. Atkinson, of Ailsa Craig; Secretary, Mr. Stewart, of Ailsa Craig. A profitable and interesting discussion followed on "Bees and their Habits and Improvement," after which a deputation consisting of Messrs. Aikes, Campbell, and Atkinson, was appointed to interview the directors of the Western Fair, with a view to securing better accommodation and inducements for bee-keepers wishing to make exhibits. The next meeting will be held in London, Ont." (A. B. J. Vol. XX., 1884, p. 182.) The Association was first called "North Middlesex," but the "North" was soon dropped. Its life has been, I believe, continuous to the present time, and it has had some of the largest county meetings.

Another county organization formed the same year and still working has about an equal reputation for good meetings. This is the Oxford County Association. *The American Bee Journal* (Vol. XX., 1884, p. 313), gives the following report of the organizing meeting.

"The bee-keepers of Oxford County, Ontario, held their first general meeting at Woodstock, on Saturday, April 19, 1884, at 10.30 a.m. After the routine business was disposed of, President J. B. Hall gave a report of his visit to Toronto in reference to the passage of a bill relative to bees affected with foul brood.

"A motion was passed authorising the Secretary to correspond with the Secretory of the Ontario Association, with a view to bringing about such united effort as will result in the passing of such a law."

We see how early present day problems were receiving the careful consideration of local associations.

Whether the Listowel Association was organized in 1884 or earlier I do not know. C. B. J. Vol. I., p. 14, reports a convention on February 18, 1885, with 100 in attendance. D. A. Jones was the chief speaker at this as at many of these meetings in the eighties. This Association thrived until about 1895, then died.

An Elgin County Association was also formed in 1884.

"The Bee-keepers of Elgin met at St. Thomas on Tuesday last (January), when Mr. S. T. Pettit, of Belmont, was appointed President of the convention; Wm. H. Hill, of St. Thomas, Vice-President, and John Yoder, of Springfield, Secretary-Treasurer. It was resolved that this Association be known as the Elgin Bee-keepers' Association, after which suitable constitution and by-laws were adopted, and

that this Association believe that the honey interest of Ontario demands legislation to enable bee-keepers to successfully contend with foul brood, and that a director be appointed to act with the Executive Committee of the Ontario Bee-keepers' Association in that behalf. Adjourned until the 29th inst." (A. B. J. Vol. XX., 1884, p. 88.)

Another session is reported in C. B. J., Vol. I., 1885, p. 201, with attendance much greater than at any previous session. This is the last heard from this Association.

In 1903 the Elgin Bee-keepers' Association was reorganized (A. B. J., Vol. 43, 1903, p. 804), and one meeting held in 1904. It again died and has not been revived.

Another fragramentary record is that of the Waterloo Association which held a convention at Elmira, May 4, 1885, S. Kinsey, President in the chair. Met again in September, 1885, and adjourned to meet again in September, 1886, but there is no record of their having done so. (C. B. J., Vol. I., 1885, p. 142, also Vol. II., p. 191.)

In 1885 a Mount Forest Association organized, and elected officers on the 18th of June. About 35 members were received at a membership fee of twenty-five cents. Regular meetings were appointed for May, June, and September. (C. B. J., Vol. I., 1885, p. 236.)

The last meeting of this Association to be reported was on June 17th, 1886.

In 1886 we have the following report from the bee-keepers of Fergus:—

"A meeting of those interested in bee culture was held at Fergus a short time since for the purpose of forming a bee-keepers' Association in the County of Wellington. There was a fair attendance of those interested in bee-culture. The Rev. J. R. Black, of Belwood, was called to the chair, and Mr. Jas. Clyne was appointed Secretary. It was resolved to form a society to be known as the Bee-keepers' Association of Wellington. A membership fee of twenty-five cents was fixed upon. The meetings will be held quarterly from the time of the present meeting. The following officers were elected:—President, Peter Jerrie, of Belwood; Secretary-Treasurer, Henry Switzer."

There seems to have been a feeling on the part of some Guelph men that the Fergus meeting was not sufficiently representative to organize a county Association. At any rate this new "Wellington" Association was not heard from again, but a "Guelph Central Association" appears on the scene, in August of the same year. The following report of the organizing meeting is taken from A. B. J., Vol. XXIII., 1886, p. 518:

"The Guelph *Mercury* of August 5th, reports the proceedings of a meeting held the day previous for the purpose of organizing a bee-keepers' Association. Mr. Thomas Simpson was elected chairman, and A. Gilchrist, Secretary, *pro tem.* It was then moved by Mr. Clark that a Bee-keepers' Association be formed, called "The Guelph Central Bee-keepers' Association." The following officers were then elected:—President, W. F. Clark; Vice-President, J. Ramsay; Secretary-Treasurer, A. Gilchrist." A discussion followed on various matters pertaining to apiculture.

This, too, is a short lived Association and drops out of sight after holding a meeting on March 23rd, 1887.

In the spring of 1911 a Wellington County Association was again formed, and we are hoping for better things.

The district convention idea has been more successfully carried out in Brantford than anywhere else in Ontario, due largely to the organizing ability of R. F. Holtermann, who was Secretary of the first meeting held February 24th and 25th, 1886, with about forty in attendance, F. Malcolm and W. F. Clark acting as chairmen.

This was "the first solely Canadian convention having a sitting of five continuous sessions," and is quite fully reported in C. B. J., Vol. I., 1886, p. 807.

In May, 1886, the Brant Bee-keepers' Association was formally organized with President W. R. Brown; Secretary, R. F. Holtermann. Arrangements were made for the Association to make a display of honey, etc., at the Brantford Fall Fair. (C. B. J., Vol. II., 1886, p. 231.)

A meeting was held in September. (C. B. J., Vol. II., 1886, p. 231.)

On December 29th, a resolution was passed suggesting "that the Ontario Bee-keepers' Association appoint inspectors to go through the country and report the condition of any and all apiaries of those selling bees, and also ask the Ontario Legislature for legislation to prevent the spread of the disease." (A. B. J., Vol. XXV., 1889, p. 41.)

It seems to have had a continuous existence in affiliation with the Ontario Bee-keepers' Association up to the present time.

A district convention was held again in 1903. At this meeting County Inspectors were asked for. It was also asked that Mr. G. C. Creelman, Secretary of Associations in the Department of Agriculture, be made Secretary of the Ontario Bee-keepers' Association. Mr. C. C. James was present and advised the bee-keepers to get more in touch with the Department. (A. B. J., Vol. XVIII., 1903, p. 357.)

District conventions have been held every winter since 1903.

Lambton was another county organized in 1886, and to Alvinston bee-keepers is the credit due. The first two meetings are reported as follows:—

"The bee-keepers of the village of Alvinston held a meeting Saturday evening, 31st July, 1886, for the purpose of considering the advisability of forming a bee-keepers' association in this village. The following officers were duly appointed: Messrs. Adam Clark, Chairman; J. R. Kitchin, Secretary; and James Newell, Treasurer. After considerable discussion they formed themselves into a body to be known as "The Alvinston Bee-keepers' Association." They intend holding a convention at this village on the 1st of September, when invitations will be sent to the bee-keepers of Lambton and Middlesex to attend and discuss the best modes of wintering and handling bees. It is the intention of the members to extend this to a county association at the convention in September." (C. B. J., Vol. II., 1886, p. 394.)

"The first meeting of the Lambton Bee-keepers' Association was held in the Council Chambers in the village of Alvinston on Wednesday, September 1st, R. Auld, of Warwick village, was appointed President and Dr. Harvey of Wyoming, Vice-President, with J. R. Kitchin, Secretary, and James Newell, Treasurer, both of the village of Alvinston. It was then extended from the Alvinston Association to the county." (C. B. J., Vol. II., 1886, p. 534.)

This Association was in existence in 1891, where the records break down, but it has disappeared in 1897, where the record is taken up again.

In 1887 the Western Ontario Bee-keepers' Association was organized at Tilbury Centre, January 12th, 1887, with President, D. Stewart, Stony Point: Secretary, E. Burgess, Tilbury Centre. (C. B. J., Vol. II., 1887, p. 870.)

This association disappears after the year 1897.

The Bruce County Bee-keepers Association was organized Saturday, December 1st, 1888, at Walkerton with fourteen members. President, John Hockley; Secretary, D. McKay. (C. B. J., Vol. IV., 1888, p. 773.)

The next meeting reported is January 30th, 1891. (A. B. J., Vol. XXVII., 1891, p. 453.)

It is not heard from again.

A Welland County Association is mentioned in 1869, but it appears only the once, and is not affiliated. (C. B. J., Vol. V., 1889, p. 257.)

In 1889 a Stratford Association was organized with F. A. Gemmell as President. In 1890 the Perth County Association presumably the same, was affiliated. It is not heard from again. (C. B. J., Vol. V., 1889, p. 496.)

The Kent County Bee-keepers' Association lived only during the year 1890.

In reference to the Glengarry Association Alex. Dickson, Lancaster, the present Secretary, writes as follows:—

"Our Association was organized in 1893 by W. J. Brown, of Chard, with a membership of ten, and since then the attendance has kept up very well. Only two of the original members—Mr. Toombs and myself—are left; two others—Mr. Calder and Mr. Morrison—have passed away, and nearly all the others have moved away. The Association has met regularly once a year, though when first organized they tried meeting twice a year for a few years. Our membership fee has always been fifty cents, and we receive a Government grant of about $18 on an average. Our money has always been spent on bee books, monthly papers, and sometimes on queens for members. As a member and one who has always taken a lively interest in the Association, I consider the money has been well spent.

"Now, from a business stand, I may say that were it not for the Association most of our members would not be where they are to-day, nor would they have made such a financial success of the business, and if it were not for the interest some of us older members took in giving the beginners information which set them on the way to success, they might not be so far advanced. As far as the local Association is concerned it has not been a great help to me, for I had been well started in the business before its origin, but I have the satisfaction of knowing that I have been of some little help to others.

"I think a great help to the bee industry would be those local demonstrations such as you conducted here.

"I believe the co-operative system of buying supplies for members would be a good thing. Our Association has tried the buying of honey tins this year for the first time, and it has proved a good thing so far."

No organizations were formed during the year 1891. In 1892 the present Halton County Association was formed. Geo. E. Saunders was the first and only Secretary until this year, when J. H. McCulley took up the work.

The York County Association was formed on April 3rd, 1894, Mr. Wm. Couse being present to help organize. Officers for the first year were president, W. S. Walton; Vice-President, D. W. Heise; Secretary, L. Mapes. Seven directors were also appointed. About 20 members were enrolled the first year, and at the present there are about thirty. Annual meetings are held, and the bulk of the grant from the Ontario Bee-keepers' Association goes for periodicals. The present Secretary, J. L. Byer, says:

"The Association has been a benefit to the members from an educational standpoint, and while we have no more beekeepers around us than was the case before, yet we have *better* beekeepers. In so far as I know, the relation of our local Association with the Ontario Association is of the very best—indeed, could not well be otherwise, considering the way they are treated. Have done nothing in the way of buying queens for members for a number of years now, but the matter has been talked over at late meetings."

Russell County was also organized about this time.

For the years 1897 and 1898, there were no new Societies formed. In 1899 Simcoe organized and in 1903 Victoria was added to the list. Both of these are doing business to-day.

From 1903 to 1911 no new Associations were formed.

In 1911 with the assistance of the Provincial Apiarist the following counties were organized:

Hastings	Secretary.	A. D. McIntosh, B.S.A., Stirling.
Huron	"	Jacob Haberer, Zurich.
Leeds	"	H. E. Eyre, Chantry.
Northumberland	"	R. S. Duncan, B.S.A., Port Hope
Lincoln and Welland	"	W. V. Bowen, Niagara Falls.
Wellington	"	R. A. Gilchrist, Guelph.

This makes seventeen County Bee-keepers' Associations in existence at the present time, and several other counties are thinking seriously of organizing during the coming winter.

Now, as to the work of these County Associations. The purpose of the first bee-keepers who called conventions was very similar to that of those who call local conventions to-day, simply to get together and talk bees the same as any two bee-keepers do when they get together, the only difference being that the bee talk is conducted in an organizezd sort of way with some one in the chair and a Secretary to report proceedings.

In addition to getting together and talking bees the next step was to persuade some man who was supposed to know more about the business than ordinary people to attend the meeting and give an address on some particular part of bee-keeping. After this address there was usually a question drawer when all kinds of questions handed in would be answered by this speaker. We find that in the eighties, Mr. D. A. Jones usually occupied this place of honour.

Then matters pertaining to the business of bee-keeping were taken up by the organization of bee-keepers. Arrangements were made for displays of honey at the local fairs. Foul Brood was a prominent subject for discussion, and also the selling of honey. As soon as the Provincial organization had secured an annual grant from the Department of Agriculture each local Association joined in affiliation with the central organization and received an annual grant of about twenty dollars.

According to the early constitution of the Ontario Bee-keepers' Association all grants to affiliated Associations were to be "expended in prizes for honey shows or for shows of apiarian appliances, or for lectures on subjects pertaining to bee culture, or for advertising district or county meetings or for any and all of these and for no other purpose." The following words were afterwards added to this by-law, "And for any other purpose not inconsistent with the objects of the Ontario Bee-keepers' Association."

At first this money after paying the expenses of the conventions was used largely for the purpose stated. Then, when the membership did not increase as rapidly as was to be desired, money was used to give premiums to members such as queen bees, books on bees, and subscriptions to bee journals. The members derived great benefit by these means. In addition to premiums received for membership in the local Association, those who also joined the Provincial Association received the *Canadian Bee Journal* and the annual report and other privileges of the Central organization.

Many of the Societies when first organized thought that they could hold meetings every month or every three months at least, but they very soon found that if they met spring and fall and got a fair attendance they were doing very well, so the regular thing for the County Associations is to hold a meeting in the spring when bee-keepers can tell how all their bees have wintered and another meeting in the fall in time to elect a delegate for the Provincial Convention.

At these spring meetings methods of management are discussed and at the fall meetings resolutions are drawn up for presentation at the Provincial meeting. In fact, almost everything that has been done for the advancement of bee-keeping as a business in Ontario has originated in some one or more of these local Associations of bee-keepers where twelve or fifteen men have gotten together and talked things over and sent up a resolution to the Central Organization to be endorsed and passed on to higher authorities.

The legislation we have in reference to the adulteration of honey and the spraying of fruit trees in full bloom has been secured in this way. The movement for the passing of an Act in reference to the inspection of apiaries also originated in some of the county meetings and nearly every increase in the number of inspectors and the appropriation for inspection work has been prompted from the same source. Even the adoption of the Association by the Department of Agriculture which took place when the Director of the Fruit Branch was made our Secretary, was suggested at one of the local meetings at Brantford some time before the change was made. This move was the beginning of a new era in bee organization, for there soon followed the appointment of a man who should give most of his time to the advancement of bee-keeping in this Province.

Following this appointment was the establishment of an experimental apiary and a department of apiculture at the Ontario Agricultural College. This gave new life to the lectures in apiculture at the Ontario Agricultural College, and students began taking a special interest in bees. Those students are supplying the material for a new era in the inspection of apiaries and will soon be available as experimenters.

Part of the work of the Provincial Apiarist is to lecture at conventions of the County Associations and to assist them in various ways. He was able during the past year to assist in the organizing of half a dozen new counties. Mention must also be made of the District Representatives of the Department of Agriculture who are taking an interest in bee-keeping in their districts. Two of these have become Secretaries of County Associations.

The most recent work undertaken by County Associations is the apiary demonstration. The Simcoe Association held several of these during the past season, using their surplus money for this purpose instead of for premiums for members. The experiment was so successful that it will be continued in this and other counties next year.

There are several points in which the county associations might improve their work. One is by realizing more fully the importance of the office of secretary. The secretary is by far the most important officer in the whole Association as on his efforts depends largely its success. If he prepares a good programme for the convention, then advertises the meeting thoroughly and widely and insistently in his county he will have a good convention. I have attended such conventions in Ontario and the numbers present and the enthusiasm displayed were very encouraging. I have attended other conventions where a handful of people would be present and I would learn afterwards that many of the bee-keepers in the

county had not been notified of the meeting. It would add greatly to the success of the conventions if more of the Government grant were expended in advertising more thoroughly the conventions of the Association. It is not enough to put notices in the papers and send post cards to the members. Post cards should be sent to all the bee-keepers in the county. It is not enough to merely state that there will be a meeting of the Association on such a date and bee-keepers are expected to be present. If that is all you tell them, not many will come. You must tell a man who the speakers are going to be, and what they are going to talk about, and if possible you should tell him the same thing in different ways two or three times before the meeting, sending him a final notice just about the last day before the convention. By the time he has received two or three notices and has read about the meeting in the papers he will think there must be something doing and decide to go and find out what it is.

Now, after the meeting is well advertised and the programme well arranged, the officers, particularly the president, must be on hand to start the meeting promptly on time and to carry the programme through on schedule. Promptness in all meetings goes a long way toward success.

Another thing is in line with what has already been done by different county Associations and that is to bring in resolutions asking for the things that are most needed for bee-keeping in that county. I have had complaints from bee-keepers that the Government was doing or was not doing what it ought to do in their county, and my reply has usually been that the place for such complaints to be made is at the meeting of the county Association, and if there is a real necessity, a resolution from such an Association will receive far more attention than the letters of individuals. An example of that took place several years ago when resolutions came from four different counties asking for increased inspection money. The immediate result of these resolutions was an increase of $500 in the appropriation for the inspection of apiaries and increased inspection work in each of the counties concerned.

County Associations can do much for their members in the matter of co-operative purchase of supplies. One or two of the counties are doing this already. Another county Association passed a resolution this fall asking for a grant of money from the county council. This is another step in the right direction.

Any number of benefits might be mentioned which organization might bring to the bee-keepers of a county. The main thing is for the progressive bee-keepers to get together and form organizations which can voice the needs of their business.

In closing I would endorse the suggestion which comes from the Middlesex County Association this fall, of an improvement of the relationship existing between the central and the branch organizations. The government of the Ontario Bee-keepers' Association is by a board of directors who are supposed to represent the districts from which they come. In most cases these directors are truly representative, yet the manner of their election is not such as to make that sure. Of necessity our annual meetings are to a certain extent local, because there are many men in different parts of Ontario who are unable to leave home and come this distance to Toronto to meet with us, yet these men should have a voice in the government of this Association. Without making too great a revolution in our present constitution, local bee-keepers' associations could be given better representation in the central organization by each sending a delegate to this meeting with the understanding that the delegate sent should at least be sure of nomination for director for the district in which his county is situated.

My suggestion would be that in calling for nomination for director for each district, the Secretary, in addition to reading the names of the members belonging to that district shall announce the names of delegates from any organized counties in that district, and either nominate them himself or ask some one to nominate these men. As you know, in a meeting that is partly fraternal as this is, nomination goes a long way towards election.

THE PRESIDENT: We would be pleased to hear from the different representatives from the counties in connection with their work. The field work this summer has been a most interesting feature of some of the local Associations, and I believe, a great deal of good has been done by these field meetings and probably some, who have taken part in these meetings, will be able to tell us how much they have done for the development of the line of instruction in bee-keeping throughout the province.

MR. NEWTON: What Mr. Pettit said was quite true. The local societies have done a great deal for the bee industry, and many of the local societies have brought forward many of the movements that we have in force to-day that have been of great interest to the bee-keepers of this province. I have been connected with the Oxford Bee-keepers as secretary for eight or nine years. I think it was organized about thirty years ago, and many good things, such as the Foul Brood Act and the Adulteration Act, were thrashed out in the Oxford Association. I am sorry to say that the Oxford bee-keepers to-day are not so interested in the local society as they were fifteen years ago. It seems rather strange that this should be. I spoke to the members when we had our meeting a few weeks ago, and I said it was disappointing. I am sure it was disappointing to me. Naturally I keep pretty busy at home, but, as I have the books, I like to attend the regular meetings. It means quite a bit for me to leave my home and go to Woodstock to attend a meeting, and then find that there are only probably six or eight there to discuss the topics of the day. They feel they can go or stay if they like, but the Secretary has got to go anyway. Now, this should not be. In union there is strength, and it puts a little more vigor in our meeting when we have a gathering of 15 or 20. In the spring they had a very nice meeting. Unfortunately I was not able to attend. It looks to me that a good many of the bee-keepers of the country feel that if you give them a $2.50 premium for 50 cents they would have a good meeting every time. I think there is no local Association that is not worth more than the face value to its members.

MR. NOLAN: Mr. Pettit, in his address, mentioned something about my speaking of the grant this year. In mentioning that point I did not wish to cast any insinuation upon Mr. Pettit that was in any way discrediting to him. I meant he had been busy and had got the bee-keepers into the Association in the counties where that work had not been carried on before, and for that reason they had become affiliated, and we have therefore several more affiliated live societies. Because when a society becomes affiliated with this society it becomes alive, and that boosts this Association along, and people get talking about this Association, and they feel there is going to be something good here and they decide to come.

As one of the directors, I understood for a number of years there has been $200 set aside each year as a grant for the affiliated societies. A few years ago there were only ten societies affiliated, and we received the handsome sum of $20. Now, figuring it out mathematically I think there are 16 societies affiliated and the grant has been reduced to $12.50; take from that the fee of $5 and there is

only $7.50 to come and go on. Mr. Newton suggests that we also must have ten members. That means some more money, but I do not see that that is very serious. If we do not find those ten live members we have got to divide that money anyway, and the Association is receiving a certain amount of benefit from the local Associations.

MR. COUSE: Speaking of the matter of local organization, which I thoroughly believe in, looking back you will find almost all organizations have come originally from where there has been one good bee-keeper. You go outside of bee-keeping, you go into any line of business where one man has been successful and you will find a number of others settled around him. Take the Dale people in Brampton, where they have seventeen acres under glass, and you will find they are not the only people in Brampton in that line of business. Dr. Thom was an enthusiastic bee-keeper and had been for a number of years, and if you will take the neighborhood of Streetsville to-day, you will find a great many bee-keepers. Take it in the neighborhood of Beeton where D. A. Jones was, and there are a great many bee-keepers of the best kinds. I do not care what you go at, organization is the very first principle of doing anything. One individual cannot do very much. This Association was organized by a very few, but if you take the neighborhood in which each one of those individuals lived in 1880, you will find there are a great many apiaries where those bee-keepers came from. You have spoken of Mr. J. B. Hall; there is also Mr. S. T. Pettit, Mr. McKnight, Dr. Thom, D. A. Jones, Louis Walbridge, and others, and you will find centred around where these men lived their children and pupils that they schooled. We are only beginning to organize, and if the bee-keepers in every county were organized you would not hear so much discussion to-day about the ignorance with reference to foul brood. For instance, I believe every member that belongs to the Halton and Peel Bee-keepers' Association understands foul brood, and the bee-keepers in that district are not afraid of it in the same sense as people who are ignorant of it. Now, the county Associations are really necessary to develop and educate along every line, whether selling, buying, or whatever it is. I believe in Mr. Pettit's idea that thorough organization is necessary to accomplish anything. You have spoken of the foul brood business this afternoon. Organize and organize thoroughly, and it will be only a very short time when all the people in the county Associations will be educated to know what it is. Mr. Creelman has great faith in what the bee-keepers are going to do for this Province in the years to come. I believe you can have bee-keepers galore. There is lots of room. Organization is the first principle. If you organize you can do something. It is the organization that does something; individuals do not do so much.

MR. SIBBALD: There is one point mentioned in Mr. Pettit's address that I remember we tried to introduce when I was president of this Association, and that was that each of the county Associations should send a delegate and that that delegate would be nominated as director for that district at that meeting. This meeting might then have the right to nominate another and vote on two or three for that matter, but I think it would help a great deal to get correct representation in your directorate if your county Association could nominate a delegate and send him here as a delegate nominated to run as director for his district in this Association and if elected he would take home an interest in both Associations and make the two unite, as it were, and he would always attend the meetings here and know what the parent Association wished from the county Association.

I believe the idea has got around that the county Association is the parent Association, and that this Association should do what they suggest.

Mr. Pettit: My idea was that neither should be considered the parent association, but take for example the relationship of the Province to the Dominion. There are so many provinces and each provincial government has its duties, and then there is a federation of them all and the Federal Government has its duty, and that would be my idea of the federation of the county associations. I brought this idea out and developed it to a certain extent a few years ago. Perhaps some of you remember a paper read here five or six years ago on what the Association might do, and the suggestion that was made at that time in reference to the election of officers was that the list of members arranged by the county should be published in the *Journal* a month ahead of time, and then a sufficient number of these slips should be printed and handed to the members so that when it comes to the election of officers each member has before him a list of the members from each county, and when it comes to electing a delegate for a certain group of counties they can read over the list and see who are members and then nominate intelligently. If that addition is made to the idea of having delegates sent from the county associations, and have it understood that they are nominees for directors, it would result in some cases in a better representation than at present, and in many cases no change would be made.

Miss Ethel Robson: As a delegate of the Middlesex Beekeepers' Association, I think, perhaps, it would be well for me to bring this matter up now, as it seems to be under discussion. At the meeting of our Middlesex Association held a few days ago this matter of the relationship of the local organizations to the Provincial organization was brought up, and judging by the discussion, there is among the Middlesex people a certain amount of dissatisfaction with the present relationship: there is a feeling that under the present method of management the executive work lies in the hands of a few people. It is almost impossible it should be otherwise, and they feel very often that the director for their district is not in any way a representative man from their district, at least not necessarily so; it is quite possible he should not be a representative man for the simple reason that the directors are nominated here in an open nomination and an open vote, and the nomination is practically half of the election as it was said at the meeting. We are all jolly good fellows here; if a man is nominated nobody wants to turn him down. Consequently the following resolution was drawn up by the Middlesex Bee-keepers. "Resolved that the Middlesex Bee-keepers' Association recommend to the Ontario Bee-keepers' Association that the constitution of the provincial Association be so changed as to make it a federation of all the local societies now in affiliation with it and such societies as may be organized, each local organization to send one delegate with the understanding that the same delegate should be one nominee for the Board of Directors for that district."

Now, on the matter of reports that have come in from the secretary so far, I would like to make a few remarks about our own society. I find in our Middlesex Association the attendance has been dropping off, particularly the last two meetings. Possibly the Secretary has been somewhat to blame in not making sufficient effort to get the bee-keepers to come out, but as the same has evidently occurred in other associations, I think it is probable that there are other reasons for it. It seems to me to be somewhat like this: We have talked at our meetings about the

management of bees over and over until we have thrashed out the old subject pretty well. The members who have been constantly attending feel it is becoming the same thing over and over. We have now something else up before the bee-keepers at present, and that is the matter of co-operation. It comes up at every meeting, but, so far, our members are not what you could call enthusiastic over it. You remember at the last provincial convention there was a committee appointed to look into the matter of the co-operative selling of honey. That committee could not make any headway; they had to let the matter drop, and you will find it the same in any case where a committee has been appointed. As yet, the enthusiasm of the members has not reached a sufficient point of interest to make them attend meetings to discuss that matter, and until we have something before the bee-keepers that they consider worth while they are not going to meet together and have a good convention. I think the day will come, and I hope it will not be long, when the bee-keepers will be enthusiastic on the matter of co-operation, because there is something more than the matter of mere dollars and cents at the bottom of it. Of course at the present we have no necessity laid upon us. The market for honey is good; we know we can sell our honey, and in the matter of purchasing supplies we do not have to spend so very much money each year, and we are inclined to put it off until the last minute to see whether we really will need them or not. So that we have not that necessity laid upon us for co-operation. But, there is another principle in co-operation, and that is the matter of working together in the best interests of our country—the best democratic interests of our country—and in co-operation we have that opportunity. We hear so much to-day about the high cost of living, and to many people it is a very vital thing. You come here in this city of Toronto, and there are hundreds of people where the men are working all day at their trade and at night building their homes. Last year when I was in Toronto I heard some people speaking of being out in one part of the city in an automobile, and at one point they heard, I think it was, hammers going in nine different directions: the men were out building the houses and the women were holding the lanterns. That is the price many people in this country have to pay to get a home. Now, in anything that is going to make it easier to make a living, everybody should have an interest; and we bee-keepers, as part of the Dominion of Canada, have a right to take our share of the burden. (Applause.)

Mr. Chrysler: I should like to remind our worthy representative from the Middlesex Association that the Co-operative Committee has not dropped the matter of co-operation as yet. Probably you may hear from it later on.

Miss Robson: The matter yet is simply in abeyance, which makes my point clear that, as yet, the enthusiasm has not reached the necessary high point.

The President: As Mr. Sibbald has stated, the matter was brought up during his presidency. I believe for the best interests of all that an organization, which would come in touch with the local association in the way suggested, would be more complete than the way we have it at present.

Mr. Evans: I think the members, who have not been on the official board, who have not been directors, may have an exaggerated idea as to what those directors do. From my experience as a director and vice-president, I came to the conclusion that there was absolutely no necessity for any officials except the President and Vice-President: that the directors were absolutely useless. Now, it is not because they are not capable or have not ability, but, because there is nothing

for them to do. They are called together probably while the convention is in session. They have a few stereotyped resolutions to pass, and besides collecting their expenses there is nothing else to do. If you could do away with the directors and save some money and give it to the county associations to help out it would be a little better.

MR. HERSCHISER: I think the directors are necessary. If it has only the effect of bringing in more members, it is a good thing.

MR. PETTIT: Dr. Phillips is with us this afternoon, and I know he has been around the United States a good deal, and he is pretty good natured, and I would like to hear from him on this matter of the local organization. Perhaps he can give us some points.

MR. HOLMES: Before this matter is dropped, for fear an impression might go abroad which would not be just in accordance with the fact, I would like to refer to one item mentioned by our friend Newton. I do not think he mentioned it with the intention of casting any reflection on any member from any county. In the course of his remarks he stated that evidently the bee-keepers in the different counties would attend the county meeting if they would get a prize of two or three dollars. Now, I wouldn't like to have it go abroad just in that form. I don't think Mr. Newton intended it as casting a reflection. I think, perhaps, he would agree with me that it would be a commendable ambition to get the better of the bargain; therefore, why not go to work and persuade them that they have actually got the two or three dollars benefit by coming to the county meetings. May we not persuade those, if they are not already persuaded, as I believe they are, that in concerted action in the county organization they will not only manage the affairs of their county, but a request coming in concerted form from the County Association to the Provincial Association has its effect and brings the thing desired. Let us go about it in earnest and accomplish the work which you wish to accomplish. Has this not been the history of this Association? Then let history repeat itself and let the bee-keepers of the county stick together and act in concert in their county, and bring their recommendation and request to the official organization and they will be heard.

MR. NEWTON: I am sure what I have said casts no reflection upon anyone in this room this afternoon, because I don't think the one who is so eager to get the $3 for 50 cents would sacrifice the time and money to come to Toronto to attend this convention. I believe, and I can say honestly, I can prove it by the members of the Oxford Bee-keepers' Association that the years we gave large premiums to our members were the years we rallied our large memberships, but the years that it dropped down were the years they thought they were not getting value for their money. The gentleman or lady interested in bee-keeping would not do such a thing and would not grudge the money for coming to a meeting such as we have here this afternoon; but it is just those who have a few hives of bees and will not put themselves out to get any information unless it comes just their way.

MR. HOGEL: I belong to the County of Ontario and live in Pickering Township. I do not think there is an organization in the county. There are a great many that keep a few bees, probably half a dozen swarms, and I have no doubt there could be an association organized in Ontario County. I came here to learn. I have kept bees fifteen years, and although I have not made a great deal of money out of them, I have had a great deal of pleasure in doing it, and I want to know

how to do more. Talking about two or three dollars, I expect to get ten, fifteen or twenty dollars' worth of information here besides my expenses.

MR. CHRYSLER: I know of localities where associations could be formed, provided some of the department would undertake to do the work. But it takes too much time for some bee-keepers to put themselves about to do it for others and it just goes undone. I would recommend to this association that they appropriate a certain definite sum for each association, and they would then know what they would be entitled to; whereas now as it is the more organizations there are, the worse it is for the associations that are affiliated.

MR. PETTIT: This member from Pickering has brought out a point about organization meetings. There is no organization in Ontario County. It is the easiest thing in the world to start a bee-keepers' association. Last winter we announced Bee Institute meetings down in Northumberland and Hastings. I do not think such a thing was ever done in Ontario before, and everybody was talking about those bee meetings. I had to wait a little while for a train at a junction in the country, so I took a little walk, met an old gentleman on the road spoke to him and asked him if this was the direction the train went up to the town I was going to. He said, "Yes, there is a bee meeting up there to-morrow." They all knew about it, because it was something new, and the people turned out in goodly numbers because it was new; curiosity brought them out. But the point is after you have brought them out by curiosity you must feed them on something that is of benefit to their business, and if you do so from time to time they will continue to come. But if they are men that are not interested in their business, and bee-keeping is not a business with them, and they just have a few hives, they are not going to come to your meetings very long. If those few come there regularly, take an interest in it, help the secretary and executive to get up a good programme, suggest speakers and don't refuse to speak when they are called upon, these few men and women are going to have good bee meetings from time to time. If the meetings are of that kind you don't need to be discouraged, even if you come to a place and find only eight or ten people there. I have gone to meetings like that, and eight or ten of us have had a real good meeting. It is not, after all, the number of people who are there, it is the benefit the members who are there receive.

MR. BYER: Is it not possible to overdo this matter of county organization? Where two counties are side by side I think one organization is sufficient, and I believe better work would be done. I think there is a strong tendency in these days to over-organize, not only in bee-keeping but in other industries.

MR. LOWEY: I have had experience, and I find an organization, which is sought, will be a success; but where they are brought in and bought and bonused they are a failure every time.

MR. CHISHOLM: I am from Hastings county. We formed an association there last winter, sometime in March, but there has not been the least move since. Neither the secretary nor president has called a meeting or sent the least word out, and I think with my friend here these bonused affairs don't amount to much. If we get enthusiastic in our own minds to do anything, we will seek the association in order that we may accomplish our work. I have come to the meetings of this Association for twenty years and I know I have been repaid hundreds of times.

DR. PHILLIPS: So far as the organization of county associations is concerned, that is, a subject with which I am not at all familiar, and I can add nothing to

what has already been said. I fully agree with the spirit of the remarks that have been made, however, that the one thing in any of these movements is to reach the individual bee-keeper; and if you can perfect a system of county organizations through which you can reach the individual bee-keepers, educating them in regard to the methods of treatment of disease or the many other subjects which arise in the bee-keepers' experience, it will undoubtedly be a great benefit to the bee-keeper of the province.

MR. PETTIT: Although the agricultural representatives have only been in the counties for a very few years they are being found so useful that all branches of farmers in all lines in the counties are making use of them to such an extent that already they are driven off their feet with work. A good many of them have assistance and have a stenographer, and they are kept just as busy as they can be looking after the different lines of farming in their county. Now it is up to the bee-keepers to make themselves heard so insistently that they will get their share of the district representative's work.

THE CO-OPERATIVE PURCHASE OF SUPPLIES.

ROBERT THOMPSON, MANAGER ST. CATHARINES COLD STORAGE COMPANY, ST. CATHARINES.

I hardly know what to say on this line, not having had the time to enquire as to the supplies you need. I did not think it was necessary, because it is the principles of co-operation that you want here, as to how it has worked out with us, and how it would work out with you. I think, possibly, what I have to say might appeal to some of your members, and it might not appeal to others. As we have found it working out in our line it appeals to us from two or three standpoints—first, to those men who want to get the dollar for fifty cents. I think possibly that in any line to-day the great majority of our people in this country, let it be town or city, are built the same way: They want to get something for less than what they give. If you want to make a success of the purchasing of supplies or co-operation towards the working out of your society the same as ours, you have first to show them where they are going to make a little out of it for their pocket. Then we hope later that you can show that we will make good members of them—men who will come to a meeting of this kind and spend a few dollars, knowing they are going to get back scores of dollars of knowledge for the few dollars they have paid out to get it. We have found that out in our association.

I need not say to you that the purchasing of supplies in quantities can be done a good deal cheaper than if purchased by individuals. That goes without any explanation.

There is another reason that we find out it pays us to get them co-operatively, and one that will appeal to the other class of members here, of the men that are wanting to better the condition not only of themselves but of their brother bee-keepers who are only looking after a few hives and do not want to go away from home and want to get all they can from their neighbors; and that is, no matter what we do to-day to help ourselves, when we are doing that we cannot but help

our brother bee-keeper, and when we are helping them we are helping ourselves. We are putting business on a better footing. There is the main object.

We are up against it to-day in our Fruit Growers' Association this past year because we have had a year in which there has been no trouble in selling our fruit and our vegetables; prices up and up all the time. Our good members would go out and sell, but in nine cases out of ten when they sold they helped to lower the general price. I am not talking to help to lower the cost of living. You might think that off hand, and yet I am, in another way, because co-operation means that if we can place our goods in the hands of the consumer without the middleman we naturally will get more for our goods and the consumer will get them for less and the middleman will get less. We have to-day unfortunately among our own people on the farms too many of our fathers and others, that are teaching their boys and girls — unconsciously in a good many cases—that they want to get out and get something for nothing, and that is the cause of the high living. Co-operation in the purchase of your supplies or in the selling of your honey will allow you to get your goods for less money, and will allow you to get more money for your honey and it will allow the consumer to get theirs for less. But the main point is that by co-operative purchase we obtain better goods, how that works out is this. It naturally happens—let it be your secretary, manager, president, or committee—that you put it in their hands to handle this line of goods, and if they have got good judgment, and do not know of some of the lines they want to purchase, they get the advice of whoever in the Committee may be an expert along that line. To illustrate that, we are buying at the present time a large quantity of artificial fertilizer. I do not pretend to know anything about that, only in a practical way, as I did not have the privilege of going to college or school to learn chemistry. We have among us a few of our fruit growers who have had that privilege, and who are experts along that line, and who are making a success of the growing of their particular line and of using artificial fertilizers. They have got it at their fingers' ends, and they know when some new line comes, or when some one from some other country comes along offering a certain line of goods, and we apply to them, they can figure it out and tell us what is the best line to buy, and at the same time what is best to buy. That will help out our particular line of fruit or vegetables which we are growing. Some want more potash, some more nitrogen and some more phosphoric acid, and that director or that member of the committee gives the advice: and the same with other lines all the way through. Another reason is that because of those experts, others, who are members, take their cue from them and we buy uniformly. We are getting the best grade and we get all alike. Even in buying our trees we find it is working out. A few of our people who give a good deal of thought to it advise as to the best varieties of apples, pears, grapes or peaches at the present time that are suitable for certain soils and certain sections, and the rest invariably follow. We are getting those lines because they are suited to the market. Take for instance in our location at St. Catharines, we are planting certain varieties which possibly would not be planted in other sections, because we are supplying a certain market, the North-west, and we are planting trees all along that line because we want enough of them. We do not care how many we plant—the more the better. You can readily see that you get a uniform grade.

I will give you another illustration. Take the question of sulphur which we are using to-day. As you know, spraying has doubled this year—100 per cent.

Apples are a little low, largely because we have got double what we expected in sprayed orchards. The spraying of orchards has been double what it has ever been before. Certain of our men have investigated and have made experiments, and the majority are making their own spraying mixture, and, of course, sulphuf is a good deal cheaper in consequence; but we wanted the best lines that suited us free from certain impurities. We want the best grade of sulphur. There is the No. 1 sulphur and the No. 2, but the ordinary man does not know the difference. I confess that if there is a carload of No. 1 in town and a carload of No. 2, and I were to look at No. 1 and No 2 without a glass, I couldn't tell the difference. I have to rely for the grade on the man we buy from. We might buy No. I and it might come from twenty different mines, and there might be impurities in it that would be injurious. That is placed in the hands of one or two to purchase the grade that is best. When we are organized, and are buying in quantities we do not have to buy from the middleman. We can go to headquarters and can buy from the head officers, and when you do that you eliminate nearly all the chance of getting a poor grade, because they are naturally interested in giving their customers good goods all the time because that means the success of their company. The middleman may change from year to year and it is not necessary for him so much to keep up the grade. By that means we get uniformity, we get the better grade and we get it cheaper. It has worked out well. It has worked out because we can go to our men who want the dollar for 50 cents and we can give it to them. We again help the outsider who is not a member because, when we have bought on a large scale, we make a record which surprises them and the middleman on the outside has to come down from his higher price to be able to compete with what we buy ourselves. It sets a price. You can see it helps us in a good many ways.

I will give you one or two points, and I hope you will ask some questions. There are just one or two other lines. We have a little trouble occasionally in some of our co-operative associations, and I have found it, too, across the line, that we have opposition sometimes from some of our better growers. You might have it from some of your better bee-keepers because they have been acting practically as agents for some of those supplies, and those men simply try to throw cold water on the movement. But if you take it up as an Association it eliminates that difficulty, because those men are broad minded enough, and if they are not influenced by that, they have enough common sense to know that they cannot come out and oppose it in the meeting; they have got to fall in with the general trend, and after a year or so they are as enthusiastic as the others. We were fortunate in that because of what we have to pay and the small prices we had to receive for our fruit, and a lot of our men, who were following along some of those lines and purchasing, threw all of their knowledge into the central and gave us that knowledge, and dropped out of the business. There was not very much in it for them. There is not very much in it for those men when they take their time into consideration. You will have to guard yourselves against that and one of the ways to do it is to put some of those men who are the largest purchasers and the men doing the biggest business, on the Committee, and get them to assist in buying for the whole of the membership of your Association.

One other point that always comes up is the financing, because our men found that they didn't know what they wanted till late in the season. We have a good deal of that, and we get around it in this way. After one or two year's experience we know practically what our members want, and we order in anticipation of that. Instead of being a little under we find they require a little over. In doing that we

usually have to pay out money. A good deal of these goods are payable on delivery, some of them in 30 days, and it is pretty hard work to collect that money from the members. I know a little about this, because we are furnishing some supplies for the central associations of the province and the secretaries and managers of those associations will ask us sometimes to wait a little while. They can't get the money in from their members at once. The way to finance that is very easy when you understand it. It caused us a little worry for three or four days when we struck it first. It has been the habit for the directorate to go on notes up to $2,000 at the bank to borrow this money. There came a time when one or two of the directors thought they did not feel like doing it. They thought they had no need to assume that risk for the others that did not do anything. After thinking over the subject we came to this plan and adopted it. It was proposed to the bank and it has been followed in other cases and it is a very fair one. If one of our members wants a few thousand baskets or so many pounds of fertilizer and so on we estimate somewhere about the cost of that; we call up the man and we ask him to give us a note to pay on the 1st October or in three or four months as the case may be. That note, it is understood, is not for cashing, but of course if he did not pay and got the goods it would have to be cashed. But, it is given for a little longer time than the money is required. It is placed in the bank as collateral and the association or central committee have no bother in getting the money from the bank with those notes lying there. We have never had occasion to cash a single one of those notes. The parties all paid the money before it came due because they have got the supplies. It is a very easy way of financing and it costs little. Another good feature is that when the member gives that note at the beginning of the year there is no difficulty with an agent coming round and talking him over to buy some other line or something in opposition.

Another way that would help you out is that some one county might be at the present time buying largely for their members of some one line; another county might be buying some other line of supplies for their members, and by communicating with those counties the members in the other counties could be supplied with the particular line that that county buys, and could get it at the cheaper rate because that county bought in large quantities.

Mr. Laing: Before you sit down I would like to ask about what increase in profits you have by the co-operative movement as compared with the selling of your goods?

Mr. Thompson: I may say at the present time, take our own association, the St. Catharines Cold Storage Company, our idea at first was to make it a financial success. Unfortunately we had only about $4,000 subscribed with a cost of $13,000. We have only at the present time $7,000 capital subscribed paid up and it has cost us over $13,000. We could not pay any dividend because we were in debt. But we paid off our debt in twelve years, and have a surplus of over $3,000. Now, of course, a portion of that is made out of handling our fruit. We have only taken up the purchase of our supplies for about six or seven years, largely only five or six years, so that it was because we saw we should have to give our members some direct benefit in the way of getting their supplies cheaper to hold them that we went into the purchasing of supplies.

We met another difficulty in paying a dividend or in giving our members their supplies at cost or a little above it. We have, of course, somewhere about 100 shareholders. We have some 300 that would be called members of this or any other association in the province that only pay their annual fee of 50 cents or a dollar

each year. Now, if we should give the shareholders their supplies at less money than the members, there would be trouble at once, and the rule we adopted was that we charge what we consider a fair price at the time the goods are sold. Take, for instance, fertilizers. We would drop the price possibly $2 below the commercial price, and then at the end of the year, when we would sum up, we would give our shareholders back $1 or $2 a ton, and so on. In that way we have lowered the price of our goods and we have held the price of goods down in other districts. Take for instance, the whole of Ontario. We issue our ultimatum that we will give a certain price for a million baskets, and if they won't give us that price we will go elsewhere for them. They have got to come to the price. Our people are in a position to know what is a fair price. The same thing in regard to fertilizer. We can get prices from the different companies for bluestone, etc.; we know exactly what is the market price and we can get the market prices that are sent from the head centres. We know, then, what we should allow whoever we are getting them from. We occasionally buy some lines from manufacturers here in Toronto if they are willing to put it down to a reasonable margin for the trouble they may have. These firms handle thousands of dollars worth and they can handle it with a very small percentage; but they don't want us to make the price too low because it gets all over the province and makes trouble for them. Then, again, we have certain dealers in our own districts who are handling some lines and in some cases we have those men combining with us and taking their supplies with us, and we only put on a small margin, the same as the man in Toronto did with us. Taking baskets, we would put 50 cents a thousand on them for our trouble, and for the advantage of the buyers being able to get baskets through the whole year at whatever time they wanted them, and in whatever quantities, instead of having to buy carloads. We agree on a certain price, two or three dollars a thousand over the net cost price, and leaving out the cost of any interest or cost in breakages or loss of time in not being able to collect your money. We count that as generally about $1 to our people. We split that in two and give the dealer 50 cents of that and we only charge the member 50 cents because, there is no loss or risk with him and he is willing to co-operate with us. It helps to enlarge our purchases. At the end of the year what we do is give our shareholders $2 and our members $1. That comes back individually to the man that uses the supplies. We were forced to this for another reason, we had men that could order a carload of baskets or a carload of fertilizer and we had to make the price to those people something near or as low as they could get it themselves, and those men in some cases have been willing to pay a trifle more, as our dealers have in baskets, for the privilege of being able to take less than a car of baskets or being able to get a ton or two of fertilizer later on, but at the end of the season it is refunded to them. The rule adopted was we wanted to make it profitable for our members to be loyal to the association. We have some men who have had a refund of over one hundred dollars. We have refunded in the neighborhood of from three to four thousand dollars; this year it will run, I fancy, as high as $5,000, at the same time holding the price down to the public and getting good out of it.

MR. LAING: That would mean an immense saving as far as the purchase of your supplies are concerned to the members?

MR. THOMPSON: Yes.

MR. PETTIT: You started your organization first with the selling of fruit and then took up the purchase of supplies later?

MR. THOMPSON: Yes. we were forced to do it at a time when peaches were practically worth nothing.

MR. PETTIT: The way we are situated just now the prices for honey are pretty fair and it has not seemed very easy for us to get together for the co-operative selling of honey, and some have suggested that we might start our organization for the purchase of supplies, and then some raised the objection that the quantity of supplies which the bee-keeper needs is very small in comparison with what he has to sell.

MR. NEWTON: How is your manager paid?

MR. THOMPSON: At the beginning we had our president and directors and some of those to do the work practically for nothing. Later I was supposed to take the management. Of course I am a farmer and one of the large shippers. We talked the matter over and we wanted to make it pay so that no matter who might be manager it would be fair, so that if I dropped out and another man took it it would be fair all round. At the same time I wanted, after we were in a position so that we could pay, to be paid what was fair for the work, and so that I could take it conscientiously and be justified. When we started in the smaller way we adopted the principle of paying a percentage on the supplies that were sold. If there was a large quantity sold, of course, that meant more work and I received more money. If there was a less quantity sold I did not do the work and I got less money. They put it at 2 per cent. We started at that time to sell our fruit and send it out to the West, and there was a dollar a car put on for the oversight in the loading of the cars. After two or three years the thing grew, and the work was a good deal heavier. and our people insisted that it should be changed to a salary, and for the last two or three years, I have had a fixed salary. I think possibly this year the Association will be ahead on the salary. Last year they would not have been, under the old rule, but they changed it two years ago so that if anyone took my place they could change the salary.

In beginning I think possibly a fixed percentage would be a good way to start I do not think it would be wise to start and pay a certain salary without knowing what you were going to be able to handle. The way it comes out best is where you have got some man that is handling a lot of stuff himself, and you make that man your manager at first. Insist on it, and you will find he will be willing to help out a little, possibly making no money, and after awhile there will be somebody willing to take his place.

We have affiliated our different co-operative associations into the central association; they each will put in probably $100, and we hope that will grow.

MR. PETTIT: Can you give us an idea of the proportion of your sales to the supplies you have to purchase.

MR. THOMPSON: We started in with, roughly speaking, in the neighborhood of $5,000. This year it will run over $100,000. I fancy next year it will run $150,000 for supplies, it is growing that fast. It is one of the best features of our association.

MR. PETTIT: How would that compare with sales of fruit?

MR. THOMPSON: It is larger now than the sales of fruit. If you are buying a small quantity you might have to pay your men a little larger percentage.

DISEASES OF BEES AND THEIR TREATMENT.

(Illustrated with Lantern Views.)

E. F. Phillips, Ph. D., Washington, D.C., in charge of Apiculture for United States Department of Agriculture.

I should be doing my sentiments an injustice, did I not begin by expressing my appreciation of the invitation which you have given me to attend this convention and to take part in your deliberations. Coming, as I do, from the Government work of the United States, the honor of an invitation is more than a personal one, for it carries with it an acknowledgement of the work which my colleagues and myself are trying to do for the bee-keeping industry. I assure you that it is the sincere desire of every one of us to do something which will result in good to the bee-keepers. An industry such as ours is not circumscribed by political boundaries. The Province of Ontario and the northern part of the United States are so closely connected, and so similar that our problems of honey production and disease control are identical.

The subject which you have asked me to discuss at this time is unquestionably of paramount importance to the bee-keeping industry to-day. The diseases of the brood of bees are causing the death of thousands of colonies annually in Canada and the United States, at a loss of thousands of dollars to bee-keepers, and reports from other countries show that we are not alone in this trouble. It is of vital importance to the industry that those engaged in bee-keeping be speedily instructed in all phases of these diseases in order to prevent the utter demoralization of the industry. It is therefore gratifying that both scientific and practical men of various countries are attacking this problem, and it is not being unduly optimistic to see in present-day conditions a rejuvenation of apiculture. But the work has only begun.

In discussing this subject I shall cover topics already incorporated in my own publications and I shall therefore quote rather freely since paraphrasing would serve no good purpose.

The Names of the Diseases.

In view of the former confusion in names it may be well to recall the origin of the ones now in use.

American Foul Brood. This name was given by the Bureau of Entomology to the disease formerly known in North America and probably generally in other countries as "foul brood."

European Foul Brood. This name was given by the Bureau of Entomology to the disease first recognized in the United States in an outbreak in New York State in 1897, formerly known as "black brood" or "New York bee disease." The name black brood is misleading, is not descriptive, and was given after a wholly insufficient and inaccurate study of the disease.

To satisfy the wordings of inspection laws then in force in the United States, the words "foul brood" were retained for both diseases. The name "European" was given to the disease which Cheyne studied in 1885, and which Cheshire told him was "foul brood." The name foul brood had been so long associated with *Bacillus alvei* that it seemed impossible not to retain the words in the name of the

disease in which *Bacillus alvei* is usually found. The name "American" was given to the disease which White has found to be caused by *Bacillus larvae* and which American bee-keepers had been calling foul brood. In neither case are the names used as indicating that either disease originated in or is prevalent on either continent since both are wide-spread on both continents. The names were chosen primarily because they are convenient and easily remembered. Since the appearances of the disease vary considerably, a descriptive name is open to criticism and the only object in giving these names was to avoid confusion and misunderstanding. This purpose has been served since the names are now in general use on this continent and are accepted by many good bee-keepers abroad.

"Pickled Brood" is a name given by Dr. Wm. R. Howard to a condition of the brood which he claimed to study. The same name has been applied generally by bee-keepers to an abnormal condition of the brood. The condition described by Howard probably does not exist. Until more is known of the disease given this name by bee-keepers, we prefer to use the expression "so-called Pickled Brood."

Nature of the Diseases.

Both infectious diseases weaken colonies by reducing the number of emerging bees needed to replace the old adult bees which die from natural or other causes. In neither case are adult bees affected, so far as known. The means used by the bee-keeper in deciding which disease is present is the difference in the appearance of the larvae dead of the two diseases. That the diseases are entirely distinct cannot now be doubted, since they show certain differences in the age of the larvae affected, in their response to treatment, and in the appearance of the dead larvae. This made still more certain by a study of the bacteria present in the dead larvae. Reports are sometimes received that a colony is infected with both diseases at the same time. While this is possible, it is not by any means the rule, and such cases are usually not authentically reported. There is no evidence that chilled or starved brood develops into an infectious disease or that dead brood favors the development of a disease.

Symptoms.

To reiterate the symptoms of the brood diseases may seem useless and it would be clearly so were it not for the fact that some of the best bee-keepers of my acquaintance have failed to recognize the diseases when they have appeared. A brief review will therefore do no harm.

The presence of a particular disease in a colony of bees can be ascertained most reliably by a bacteriological examination, since the symptoms are somewhat variable. It is possible, however, to describe the usual manifestations of the diseases, and the usual differences, so that the bee-keeper can in most cases tell which disease is present.

American Foul Brood. American foul brood is frequently called simply "foul brood." It usually shows itself in the larvae just about the time that the larvae fills the cell and after it has ceased feeding and has begun pupation. At this time it is sealed over in the comb. The first indication of the infection is a slight brownish discoloration and the loss of the well-rounded appearance of the normal larva. At this stage the disease is not usually recognized by the bee-keeper. The larva gradually sinks down in the cell and becomes darker in color, and the post-

erior end lies against the bottom of the cell. Frequently the segmentation of the larva is clearly marked. By the time it has partially dried down and has become quite dark brown (coffee colored) the most typical characteristic of this disease manifests itself. If a match, stick or toothpick is inserted into the decaying mass and withdrawn the larval remains adhere to it and are drawn out in a thread, which sometimes extends for several inches before breaking. This ropiness is the chief characteristic used by the bee-keeper in diagnosing the disease. The larva continues to dry down and gradually loses its ropiness until it finally becomes merely a scale on the lower side wall and base of the cell. The scale formed by the dried-down larva adheres tightly to the cell and can be removed with difficulty from the cell wall. The scales can best be observed when the comb is held with the top inclined toward the observer so that a bright light strikes the lower side wall. A very characteristic and usually penetrating odor is often noticeable in the decaying larvae. This can perhaps best be likened to the odor of heated glue.

The majority of the larvae which die of this disease are attacked after being sealed in the cells. The cappings are often entirely removed by the bees, but when they are left they usually become sunken, and frequently perforated. As the healthy brood emerges the comb shows the scattered sunken cappings covering dead larvae, giving it a characteristic appearance.

Pupae also may die of this disease, in which case they, too, dry down, become ropy, and have the characteristic odor and color. The tongue frequently adheres to the upper side wall and often remains there even after the pupa has dried down to a scale. Younger unsealed larvae are sometimes affected. Usually the disease attacks only worker brood, but occasional cases are found in which queen and drone brood are diseased. It is not certain that race of bees, season, or climate have any effect on the virulence of this disease, except that in warmer climates, where the breeding season is prolonged, the rapidity of devastation is more marked.

European Foul Brood. European foul brood was formerly called "black brood" or "New York bee disease." The name "black brood" was a poor one, for the color of the dead brood is rarely black or even very dark brown. European foul brood usually attacks the larva at an earlier stage of its development than American foul brood, and while it is still curled up at the base of the cell. A small percentage of larvae dies after capping, but sometimes quite young larvae are attacked, sunken and perforated cappings are sometimes observed just as in American foul brood. The earliest indication of the disease is a slight yellow or gray discoloration and uneasy movement of the larva in the cell. The larva loses its well-rounded, opaque appearance and becomes slightly translucent, so that the tracheae may become prominent, giving the larvae a clearly segmented appearance. The larva is usually flattened against the base of the cell, but may turn so that the ends of the larvae are to the rear of the cell, or may fall away from the base. Later the color changes to a decided yellow or gray and the translucency is lost. The yellow color may be taken as the chief characteristic of this disease. The dead larva appears as a moist, somewhat collapsed mass, giving the appearance of being melted. When the remains have become almost dry the tracheae sometimes becomes conspicuous again, this time by retaining their shape, while the rest of the body content dries around them. Finally all that is left of the larva is a grayish-brown scale against the base of the cell, or a shapeless mass on the lower side wall if the larva did not retain its normal position. Very few scales are black. The scales are not adhesive, but are easily removed, and the bees carry out a great many in their efforts to clean house.

Decaying larvæ that have died of this disease are usually not ropy as in American foul brood, but a slight ropiness is sometimes observed. There is usually little odor in European foul brood, but sometimes a sour odor is present, which reminds one of yeast fermentation. This disease attacks drone and queen larvae almost as quickly as those of the workers.

European foul brood is more destructive during the spring and early summer than at other times, often entirely disappearing during later summer and autumn, or during a heavy honey flow. Italian bees seem to be better able to resist the ravages of this disease than any other race. The disease at times spreads with startling rapidity and is most destructive. Where it is prevalent a considerably larger percentage of colonies is affected than is usual for American foul brood. This disease is very variable in its symptoms and other manifestations and is often a puzzle to the bee-keeper.

The so-called Pickled Brood. This name is seemingly applied to a great many different appearances, and nothing is known of the cause or methods of spread. The most typical form kills the larva when it has extended itself in the cell. The larva usually lies on its back with the head turned upwards. The color varies, but is frequently light yellow or brown, and the head is often almost black. The body is swollen and the contents watery, and the head may be quite hard. There is no ropiness. In case the larvae are sealed before dying the cappings are usually normal. The name usually applied to this condition was unwisely chosen, and for the present and until more is known concerning the disease it is spoken of as the "so-called pickled brood."

This trouble does not appear to be infectious and is usually not serious, except that in the aggregate it may cause loss by weakening colonies. No treatment is necessary, as the trouble usually soon disappears. The most serious aspect of this disease is that it is often mistaken for one of the infectious diseases, and the colony is needlessly treated.

Methods of Spread.

Both American foul brood and European foul brood spread from colony to colony and from apiary to apiary in much the same way. The common means of carrying the virus is in honey which has become contaminated. The disease may be carried when bees rob a hive in which a colony has died of disease or may be transmitted by the use of honey from diseased colonies for feeding bees. It is not always necessary that bees be intentionally fed for them to get disease from contaminated honey. Discarded honey receptacles which have contained honey from a contaminated colony, if not thoroughly cleaned, may contain enough honey to carry disease to a healthy apiary. This may occur in the vicinity of bakeries or confectionery shops, or may even occur when empty honey bottles are thrown out from private houses. It is also possible to introduce disease into a colony in introducing queen bees purchased from a distance, probably due to the use of contaminated honey in making the candy to supply the queen cages.

Precautionary Measures.

In combating diseases it is much better to prevent disease from getting a foothold than it is to eradicate it after it has begun its work. All bee-keepers, wherever located, should practice the following pecautionary measures:

(1) If a colony becomes weak from any cause, or if disease is suspected, contract the entrance to prevent robbing, and if robbing is imminent close the entrance entirely.

(2) *Never feed honey purchased on the open market.* In case of doubt as to the source of honey feed sugar syrup.

(3) If within the range of possibility, see that no honey that comes from diseased apiaries is sold in the neighborhood. This may sometimes be accomplished by cultivating the home market so that there will be no incentive for bringing in other honey.

(4) In introducing purchased queens, transfer them to clean cages provided with candy known to be free from contamination, and destroy the old cage, candy, and accompanying workers. Of course, if it is certain that the queen comes from a healthy apiary this is not necessary.

(5) Colonies of bees should never be purchased unless it is certain they are free from disease.

(6) The purchase of old combs or second-hand supplies is dangerous, unless it is certain that they came from healthy apiaries.

The Causes of the Diseases.

The work of controlling bee diseases rests more than is usually understood on a knowledge of their causes. "To know truly is to know through causes" is as true to-day as when Bacon penned the line. In discussing this part of the subject I shall draw on the work done by my colleague, Dr. White, who has worked long and arduously on this subject.

The situation cannot be made entirely clear to men who have been familiar with the older theories without referring very briefly to the history of the investigations into the causes of disease since statements which we now believe to be incorrect have passed current among bee-keepers for so many years. In questioning the adequacy of the work of the earlier workers in this field we do injustice if we expect of them work equal in all respects to the best done to-day. However, it is difficult to resist the temptation to suspect some of the writers of an unscientific spirit in their work. If a man of scientific training, aspirations or reputation puts before a body of practical men statements which are based almost wholly on speculation and certainly on inadequate observations he does injustice to himself and to his audience and deserves condemnation. I regret to admit that a careful study of the literature on bee diseases adds little lustre to the glory of some of the long accredited authorities in beedom.

Early in 1884 Cheshire was invited by the British Bee-keepers' Association to read a paper on "foul brood" although he had not previously interested himself on this subject. About two months after his work was instituted there began to appear articles in the *British Bee Journal* in which he claimed to have made great discoveries concerning the disease. In August of that year he took a single piece of comb to a bacteriologist, Mr. Cheyne, from which an organism was isolated and described, and to which Mr. Cheshire's name "*Bacillus alvei*" was given. Cheshire

came to deny the existence of two brood diseases although they had been previously differentiated and attributed all infectious troubles of the brood to this organism. That he mixed the two diseases in his description seems certain and there can be little reasonable doubt that the sample taken to Mr. Cheyne was what we now call European foul brood.

Following these papers it was commonly accepted among bee-keepers that "foul brood" is caused by *Bacillus alvei,* but the name "foul brood" was most commonly applied by bee-keepers to the disease now called American foul brood. American bee-keepers were strengthened in this erroneous view by the statements of Cowan, who on examining a sample of dead brood in the United States pronounced it to be the same as the "foul brood" of England, and stated that he found *Bacillus alvei* present. The examination made was obviously entirely inadequate, and the conclusion that *Bacillus alvei* is the cause of the trouble was entirely unwarranted. Since *Bacillus alvei* had never been shown to be the cause of any disease we may omit discussion of those papers in which further studies of *Bacillus alvei* were made.

As before stated, a disease broke out in the Mohawk Valley, New York, in 1897 which observing bee-keepers saw was not the "foul brood" which they had known in previous years. This disease we now call European foul brood. Dr. Wm. R. Howard, of Texas, studied this disease a few days and reported that it is due to an organism which he called *Bacillus milii,* modified probably by another bacillus.

Not content with a determination of such importance, Dr. Howard later attempted to add to the sum of human knowledge by describing a condition which he called "Pickled Brood" and by ascribing it to a fungus. From his descriptions the bee-keepers of the country were led to conclude that a certain condition which they readily recognize and call "Pickled Brood" is due to this fungus.

From this brief and fragmentary history it will be seen that only a few years ago (1902) the causes of the three abnormal conditions of the brood were generally accepted as known. A careful study of the various papers will show that in not a single case had the cause been proven, and we now believe that in not a single case were the conclusions correct. This is a record of misspent energy and regrettable inaccuracy, and it is scarcely to be questioned that bee-keepers would be better off to-day if these papers had never been written. It is difficult to escape a feeling that some of these men were unwarranted in entertaining or expressing any opinion on the subject.

Concerning the cause of American foul brood I shall quote from a paper by Dr. White (Bulletin 75, Part IV, Bureau of Entomology.) "That *Bacillus larvae* is the cause of American foul brood has been demonstrated conclusively. It is a species of bacteria, which when it is introduced into the healthy larvae, multiplies rapidly and causes the death of a large amount of the brood. When the larva dies the body decomposes and the remains dry down to a tongue-like scale on the lower side wall of the cell. In this scale are millions of spores which are able to produce disease in other larvae should they be fed to them.

"Just how the bacteria are carried from a dead larva to a healthy one we do not know. It is not uncommon, in examining the brood, to find only a portion of a larva in a cell, the bees having removed a part of it. When the body wall of a larva is broken in examining for foul brood, bees readily suck up the contents which flow out. This is true when the larva which is punctured is healthy, or when it is sick with disease, or after it has been dead a few days. The larvae at these stages of the disease contain a very large number of the disease-producing bacteria. These observations would indicate that in this way, in part at least, the infectious

material might be carried to healthy larvae. Actual contact of the appendages of the bee with the foul brood material, and the subsequent contact of the same appendages with the food of the larvae, may be a method by which the disease-producing bacteria are spread. We do know that in foul brood it is possible to obtain *Bacillus larvae* from the honey, and we do know that when the bees are fed the spores of *Bacillus larvae* in honey American foul brood will appear in the apiary.

"The spores of this bacillus are very resistant to heat and other disinfectants. They resist the boiling temperature of water for fifteen minutes. In 5 per cent. carbolic acid they were not killed in two months' time. This was demonstrated by obtaining growth in culture after the spores had remained in this disinfectant for that length of time. Likewise it has been demonstrated that the spores of *Bacillus larvae,* when taken from the scales of American foul brood, resist the action of mercuric chloride (corrosive sublimate), 1: 1,000 aqueous solution, for two months. Having such facts before us, we can better judge the methods of treatment."

Concerning European foul brood, Doctor White says in the same bulletin "In European foul brood we only know positively that the disease is infectious, and we can do no better than to use the principles gained by the study of American foul brood. As our knowledge of the etiology of this disease increases, the methods of treatment will be altered."

This statement does not agree with those made by certain European writers who claim to have established the cause of the disorder. Since their claims can not be verified or their reported results confirmed it is impossible to accept their conclusions.

The so-called Pickled Brood is seemingly not an infectious disease, and nothing is known with certainty as to its cause. No treatment is necessary since it rarely is a serious injury to a colony.

It is not easy to find the cause of a disease, be it a disease of the bee or some other organism. If it were, is it probable that so many human diseases would still be due to unknown causes? It is a conservative and wise policy therefore to question the accuracy as to the causes of disease which come from men who announce results with no investigation or with too small an amount of work. Let us be no longer blind followers of every self-appointed authority, but rather let us each become a doubting Thomas. Prove all things or at least compel a claimant to prove his claims and hold fast only to that which is proven good.

Distribution in the United States.

In conducting a campaign for the eradication or control of a pest it is of the highest importance that information be obtained concerning its location. For this reason one of the phases of the work on the brood diseases of bees in the Bureau of Entomology has been to learn where these diseases now occur in the United States. There has never before been an opportunity for such work, and the extent of disease has been largely a matter of estimate and conjecture. It is obvious that such data are of value not only in aiding present apiary inspection, but also in obtaining inspection where it is not now provided. These data are also to be used in the distribution of bulletins and other publications to the people who need them and in numerous other ways.

My only object in discussing this subject at the present time is to use the data obtained in the United States as a demonstration of what may be expected from these diseases. If data for the Dominion were available and as familiar to me, I

doubt not that I could make out as bad a case against disease. But a few years ago diseases were discussed comparatively little in the bee journals, and only in States where disease had been quite prevalent for a long time was there any legislation providing for apiary inspection. Fortunately the bee-keepers are more awake to existing conditions to-day and the announcement of a new apiary inspection law or the substitution of a good law for a poor one is a common occurrence.

The seeming indifference on this subject was due largely to lack of knowledge concerning the extent of these diseases for the distribution of the two diseases was formerly entirely a matter of conjecture. European foul brood has been known to exist in New York State since 1897, and occasionally some bee-keeper from another state would write that he feared that he had "black brood." American foul brood was supposed to be particularly prevalent in the west, and was not known to exist widely in the east except in a few states where apiary inspection had been instituted. When the Bureau of Entomology began work on brood diseases it was realized that it is highly important to know where the diseases are found. As soon as possible, therefore, work was begun to find out the occurrence and prevalence of these troubles. It was not possible to predict that so much disease would be encountered and I fear that if the extent of the work had been suspected that we might have hesitated about undertaking so large a piece of work.

In May last a circular was issued by the Bureau of Entomology (Circular 138) giving the data on this subject acquired by the Bureau previous to March 1st. In this circular, American foul brood is recorded as present in 294 counties in 37 states and European foul brood in 165 counties in 23 states. From seemingly reliable reports American foul brood is given as "suspected" in 150 additional counties, and European foul brood in 63 additional counties. Eliminating duplicates this shows brood diseases as present in 416 counties and suspected in 175 additional counties. According to these records, disease was known to exist or suspected in all the States and Territories except Delaware, District of Columbia, Georgia, Hawaii, Louisiana, Montana, North Carolina, North Dakota, Porto Rico, Rhode Island and South Carolina.

Since this publication was prepared, the work has been continued. Up to August 15th American foul brood samples had been received from 64 additional counties and European foul brood from 46 additional counties, making totals of American foul brood in 358 counties and European foul brood in 211 counties. Two of the States not previously recorded as containing disease have been found to have some American foul brood present, now showing American foul brood present in 39 States and European foul brood in 26 States. The total number of counties in the United States is 2,932 so that disease is known to exist in about 17 per cent. of the counties. It is also doubtful whether we have received samples from half of the counties containing disease. When it is considered that these records are almost solely from the best bee-keeping sections of the United States it is evident that conditions are more serious than the percentage indicates. Probably at least 200,000 bee-keepers are so situated that they should speedily learn to recognize and treat these maladies.

The Bureau of Entomology is doing what little it can to help in educating bee-keepers concerning these diseases by sending bulletins and circulars on the subject to bee-keepers whose names can be obtained in the territory known to contain disease. When the numbers involved are considered, this seems like a large undertaking. It is, however, not doing much for the individual bee-keeper. That the sending out of these bulletins results in good is indicated by the letters which

we receive from the territory covered, and especially by the large number of requests received from others whose names we did not previously have asking that they too be sent the bulletin. When a sample of brood is received from a new locality, the inspector of that territory, if there is one, is notified and as soon as possible, with our limited facilities, the bulletins are sent out.

It may be of interest to indicate how this data is obtained. Circulars are first sent out to all postmasters in the territory to be worked, asking for the names of bee-keepers. So far we have covered about half of the United States by this method. After the names are received a circular asking for information concerning the presence of disease is sent to each bee-keeper. Some do not reply, some report no disease but some send samples for examination, part of which are found to contain infectious disease. A careful card record arranged by numbers as well as by state and county is kept of all samples received, and maps are also marked to show the presence of each disease. The senders of samples, are, of course, promptly notified of the results of the examination. So far we have had about 2,500 samples for examination.

When the first circulars do not bring satisfactory responses, letters are written to some half dozen bee-keepers in a county asking for reports. This usually brings a definite reply. So far we have not had facilities for carrying the matter farther. It is realized that this method does not give reliable information concerning the prevalence of disease in a county but merely indicates its presence. A considerable experience in the field leads us to conclude that diseases are usually much more widely spread than is known even by the best bee-keepers in a county. It should be mentioned that a report of the absence of disease is not to be accepted in most cases since unfortunately even good bee-keepers fail to inform themselves concerning the condition of apiaries near them. Many bee-keepers do not even know the condition in their own yards.

In asking bee-keepers for data on the occurrence of these diseases it is found that some are unwilling to let it be known that they have disease in their apiaries. This, of course, should not be so, as it is no particular disgrace to have disease appear in the apiary. The disgrace comes in allowing it to remain. In appreciation of this feeling, however, the Bureau makes it a policy not to announce the names of the men supplying the samples. The records are here made only by counties, and it is believed that no bee-keeper will consider this a betrayal of confidence.

In making records it was necessary to consider a county as a unit. It is impracticable for the bureau to work with units smaller than counties. A county is recorded as containing disease when the first sample of diseased brood has been received from that county. In most cases, however, several samples have been received from the counties recorded as having disease present. A considerable experience in the examination of infected apiaries indicates that it is usually safe to assume that disease is more widespread than is recognized by even the best bee-keepers.

From the extent of the work it is obvious that most of these data were obtained by correspondence. No claim is made that all of these counties have been visited. It did not seem advisable to accept reports of the existence or nonexistence of disease, but to make positive records only on the receipt of a sample of diseased brood for examination. It frequently happens that letters are received stating that no disease has ever occurred in the county when samples of diseased brood have already been received in considerable numbers, and in some cases after personal

examination has shown disease to be prevalent. Furthermore, an infectious disease is often mistaken for chilled brood or so-called pickled brood, or *vice versa.*

Treatment.

The treatment of an infectious bee disease consists primarily in the elimination or removal of the cause of the disease. It is definitely known that American foul brood is caused by a bacillus named *Bacillus larvae.* In treating this disease, therefore, the aim of the manipulation is to remove or destroy all of the bacteria of this species. It should be remembered that the effort is not to save the larvae that are already dead or dying, but to stop the further devastation of the disease by removing all material capable of transmitting the cause of the trouble.

The cause of European foul brood is not definitely known, but the same principles of treatment doubtless apply in this disease also. In all of the operations great pains should be taken not to spread the disease through carelessness. After handling a diseased colony the hands of the operator should be washed with water to remove any honey that may be on them. It does not pay to treat colonies that are considerably weakened by disease. In case there are several such colonies they should be united to form strong, vigorous colonies before or during treatment.

In discussing treatment it is assumed that hives with movable frames are in use. Box hives are a menace in regions where disease is present. These may be treated for disease by drumming the colony into another box and then hiving it like a swarm in a hive; but box hives are not profitable, and are especially to be condemned where disease is present on account of the difficulty in inspecting and treating.

Shaking Treatment.

The shaking treatment consists essentially in the removal of all infected material from the colony, and in compelling the colony to take a fresh start by building new combs and gathering fresh stores. This is done by shaking the bees from the old combs into a clean hive on clean frames.

Time of Treatment. The shaking treatment should be given during a flow of honey so that other bees in the apiary will not be inclined to rob. If this is not possible the operation may be performed under a tent made of mosquito netting. The best time is during the middle of a clear day when a large number of bees are in the field. It is sometimes recommended that shaking be done in the evening, but this is impossible if many colonies are to be treated. The colony can be handled more quickly when the field force is out of the hive.

Preparation. All implements that will be needed, such as queen and drone trap, hive tool, and lighted smoker, should be in readiness before the operation is begun. A complete clean hive with frames is provided, as well as a tightly closed hive body in which to put the contaminated combs after shaking. An extra hive cover or some similar apparatus should be provided to serve as a runway for the bees as they enter the new hive. The new frames should contain strips of comb foundation from one-fourth to 1 inch wide. Full sheets are not desirable, and if combs built on full sheets of foundation are desired they may be built later.

Operation. The old hive containing the diseased colony is now lifted to one side out of the flight of returning field bees and the clean hives set exactly in its place. The cover is now taken off and a few frames removed from the centre of the

hive. If unspaced frames are used, those remaining in the hive should be pushed tightly to either side of the hive, thus making a barrier beyond which the bees can not crawl as they move to the top of the hive after shaking. This largely prevents them from getting on the outside of the hive. If self-spacing frames are used, a couple of thin boards laid on the top bars on either side will accomplish the same result. The runway is put in place in front of the entrance. The old hive is now opened for the first time. The frames are removed one at a time, lowered part way into the new hive, and with a quick downward shake the bees are dislodged. The frames are then put into the extra hive body and immediately covered to prevent robbing. After all the frames are shaken the bees remaining on the sides of the old hive are shaken out.

If honey is coming in freely, so that thin honey is shaken out of the combs, cover the runway with newspapers and shake the bees in front of the new hive, leaving all frames in place and the cover on. After the operation the soiled newspapers should be destroyed. In shaking in front of the entrance the first one or two frames should be so shaken that the bees are thrown against the entrance, where they can locate the hive quickly. They then fan their wings and the others follow them into the hive. If this is not done the bees may wander about and get under the hive or in some other undesirable place.

After the bees are mostly in the new hive a queen and drone trap or a strip of perforated zinc is placed over the entrance to prevent the colony from deserting the hive. The queen can not pass through the openings in the perforated zinc and the workers will not leave without her. By the time that new combs are built and new brood is ready to be fed, any contaminated honey carried by the bees into their new hive will have been consumed and the disease will rarely reappear. If it should, a repetition of the treatment will be necessary.

Saving the Healthy Brood. The old combs are now quickly removed. If several colonies are being treated at one time it may pay to stack several hive bodies containing contaminated combs over a weak diseased colony to allow most of the healthy brood to emerge, thereby strengthening the weak colony. After ten or twelve days this colony is treated in turn and all the combs rendered into wax. If only one or two colonies in a large apiary are being treated it will not pay to do this.

Saving the Wax. Any but a very small apiary should have included in its equipment a wax press for removing wax from old combs. After the contaminated frames are taken to the honey house, the combs should be kept carefully covered, so that no bees can reach them until the wax can be rendered. This should not be delayed very long or the combs may be ruined by wax moths. The slumgum or refuse remaining after the wax is removed should be burned. Contaminated combs should not be put into a solar wax extractor for fear of spreading the disease. The wax from contaminated combs may safely be used for the manufacture of comb foundation.

Cleaning the Hive. The hive which has contained the diseased colony should be thoroughly cleaned of all wax and honey, and it is desirable that it be carefully disinfected by burning out the inside with a gasoline blueflame torch. If this piece of apparatus is not available several hive bodies may be piled together on a hive bottom and some gasoline or kerosene poured on the sides and on some straw or excelsior at the bottom. This is then ignited and after burning for a few

seconds a close-fitting hive cover is placed on top of the pile to extinguish the flames. The inside of the hive bodies should be charred to a light brown. The careful cleaning and disinfection of frames always costs considerably more in labor than new frames would cost, but these also may be carefully cleaned and used again. Frames may be cleaned by boiling in water for about half an hour, but this frequently causes them to warp badly. The disinfection of hives and frames with chemicals is not recommended, as the ordinary strengths used are valueless for the purpose.

Disposal of the Honey. If there is a considerable quantity of honey in the contaminated combs it may be extracted. This honey is not safe to feed the bees without boiling, but it is absolutely safe for human consumption. If there is a comparatively small quantity it may be consumed in the bee-keeper's family, care being taken that none of it is placed so that the bees can ever get it.

To put such honey on the market is contrary to law in some States. There is always danger that an emptied receptacle will be thrown out where bees can have access to it, thus causing a new outbreak of disease. It can be safely used for feeding to bees, provided it is diluted with at least an equal volume of water to prevent burning, and boiled in a closed vessel for not less than one-half hour, counting from the time that the diluted honey first boils vigorously. The honey will not be sterilized if it is heated in a vessel set inside of another containing boiling water. Boiled honey can not be sold as honey. It is good only as a food for bees, and even then should never be used for winter stores, as it will probably cause dysentery.

The Second Shake. Some bee-keepers prefer to shake the bees first onto the frames containing strips of foundation as above described, and in four days to shake the colony a second time onto full sheets of foundation, destroying all comb built after the first treatment. This insures better combs than the use of strips of foundation, but is a severe drain on the strength of the colony. Since it is desirable to have combs built on full sheets, the best policy is to replace any irregular combs with full sheets of foundation or good combs later in the season.

The Cost of Shaking. If the treatment just described is given at the beginning of a good honey flow, it is practically equivalent to artificial swarming, and results in an actual increase in the surplus honey, especially in the case of comb-honey production. The wax rendered from the combs will sell for enough to pay for the foundation used if full sheets of foundation are employed. Since a colony so treated actually appears to work with greater vigor than a colony not so manipulated, the cost of treatment is small. If treatment must be given at some other time, so that the colony must be fed, the cost is materially increased. In feeding, it is better to use sugar syrup, or honey that is known to have come from healthy colonies.

Treatment with Bee Escape.

As a substitute for the shaking treatment just described, the bees may be removed from their old combs by means of a bee escape. The old hive is moved to one side and in its place is set a clean hive with clean frames and foundation. The queen is at once transferred to the new hive and the field bees fly there on

their return from the field. The infected hive is now placed on top of or close beside the clean hive and a bee escape placed over the entrance, so that the younger bees and those which later emerge from the cells may leave the contaminated hive but cannot return. They therefore join the colony in the new hive. If desired, the infected hive may be placed above the clean hive and a tin tube about 1 inch in diameter placed from the old entrance so that the lower end is just above the open entrance of the new hive. The bees follow down this tube and on their return enter the new hive. When all of the healthy brood has emerged from the infected combs the old hive is removed. This treatment induces less excitement in the apiary and is preferred by many experienced bee-keepers. Care should be taken that the old hive is absolutely tight to prevent robbing. The old hive and its contents of honey and wax are treated as indicated under the shaking treatment.

Fall Treatment.

If it is necessary to treat a colony so late in the fall that it would be impossible for the bees to prepare for winter, the treatment may be modified by shaking the bees onto combs entirely full of honey so that there is no place for any brood to be reared. This will usually be satisfactory only after brood rearing has entirely ceased. Unless a colony is quite strong it does not pay to treat in the fall, but it should be destroyed or united to another colony. In case a diseased colony dies outdoors in the winter there is danger that other bees may have opportunity to rob the hive before the bee-keepers can close the entrance. In case bees are wintered in the cellar it is more advisable to risk wintering before treatment, for if the colony does die the hive will not be robbed.

Drugs.

Many European writers have in the past advocated the use of various drugs for feeding, in sugar syrup, to diseased colonies, or the fumigation of contaminated combs. In the case of American foul brood, of which the cause is known, it has been found that the drugs recommended are not of the slightest value and no time should be wasted in their use.

Treatment for European Foul Brood.

European foul brood is a very peculiar disease, and its cause has not yet been satisfactorily determined. It is, therefore, impossible to discuss the treatment of this disease as definitely as that of American foul brood. From the experience of many careful bee-keepers it is, however, possible to suggest some additional manipulations which may be tried by experienced bee-keepers. The treatments given previously are strongly recommended for this disease.

Introduction of Italian Stock.

Since, as stated previously, Italian bees seem to be better able to withstand European foul brood than are other races, it is recommended that apiaries in regions where this disease is prevalent be requeened with young, vigorous, Italian queens of good stock. This should be done whether or not the shaking treatment is given.

Dequeening.

It has been found that the removal of the queen and the keeping of the colony queenless for a period often results in the disappearance of European foul brood. The length of time that this should be done is in dispute. Mr. E. W. Alexander, who advocated this method, recommended that the colony be kept queenless (by cutting out all queen cells at the end of 9 days) for a period of 20 days, at which time a cell containing a queen of Italian stock ready to emerge is to be given the colony. The young queen will thus begin to lay in about 27 days after the old queen has been removed, or in at least 3 days after the last of the drone brood has emerged. Other writers have advocated a shorter time.

The dequeening treatment is not always successful, and it is, therefore, recommended that care be exercised in trying it. Since there is a considerable percentage of successful results, this would indicate that there is an important principle involved. It should not be forgotten, however, that European foul brood often disappears in the late summer of its own accord if the case is not severe, and it is probable that in many of the cases of dequeening reported as successful the disease would have disappeared without the treatment. This treatment is suggested only for the experienced bee-keeper.

Means of Control.

The bee-keepers are perhaps being reached most intimately in the campaign against bee diseases by the inspectors of apiaries. In 1906 the Bureau of Entomology published a compilation of the apiary inspection laws then in force in the United States. They were twelve in number. Of these, two have been replaced by better laws, and the bee-keepers in the respective states have asked, or are asking, that four others be improved. Two have been removed from the statute books, indicating that only four of the twelve are now considered satisfactory. These are the laws in Idaho, New York, Utah, and Wisconsin.

Of these twelve laws, two, those of New York and Texas, placed the apiary inspection under a State office having in charge other lines of inspection. California, Colorado, Idaho, Nebraska, Montana, Ohio, Utah and Washington then had the county system of inspection. While some of these county inspection laws are still in force, it seems clear now that the system is not the best, and fortunately four of these laws are no longer in force. Michigan, New York, Texas, and Wisconsin had state inspection, and in at least two cases improvements in the laws are desired.

Without going further into the history of inspection legislation, it is gratifying to know that now there are 29 states and territories having some kind of law or regulations on this subject. During the past winter fourteen new laws were being asked for, of which eight were passed, although Pennsylvania failed to get an appropriation. Seventeen of the laws or regulations now in force place the inspection or supervision under an already existing State or Territorial office. This is an increase of fifteen since 1906. Some county inspection laws are still in force, but the lack of harmony existing among the various inspectors in the State is being recognized as well as the general inefficiency of such a system.

For some time past the Bureau of Entomology has recommended the placing of the apiary inspection under the State Entomologist. In 1906, Texas was the only State where the inspection was so organized. In New York the work was and is under the supervision of the Commissioner of Agriculture, who has charge

of all agricultural inspection. Where there is no general agricultural inspection office, the most satisfactory results have been obtained from work under the State Entomologist or corresponding officials. At present Massachusetts, Rhode Island, Connecticut, New Jersey, Pennsylvania, Ohio, Indiana, Kansas, Texas, and Colorado have such a plan or its equivalent. Vermont, New York, Michigan, Tennessee, Missouri and Hawaii place the work subject to the supervision and appointment of some State official other than the Governor.

The plan in force in several states of having the inspector or inspectors appointed by the Governor as independent officers is good only when by chance good men are chosen, and even under such circumstances the results are usually open to more or less criticism. When the inspector is independent of all other State work he naturally cannot afford to maintain an office for properly conducting his correspondence, and usually no sort of workable record is kept so that the results and progress of the work may be known. The lack of businesslike supervision of the work brings discredit to the industry and, too, only isolated beekeepers are helped instead of the formulation of a broad policy for the benefit of all of the bee-keepers of the State.

Often the State Bee-keepers' Association practically appoints the inspector. It might seem, at first thought, that the Association is best able to know who should be inspector, but it should be evident that almost any of our small state conventions could be overrun with advocates of an incompetent or office-seeking man at small expense. Furthermore, when the inspector is so chosen, he is usually more anxious to look out for the interests of his fellow members than for those of bee-keepers at large. The influence of the State Associations has been almost as pernicious as party politics in a number of cases, and for the good of the work it seems to me that our State Associations should withdraw from this line of activity. In one State the Association actually prevented the passage of a law for at least four years because they would not give up the appointing power. These things are not pleasant to say, nor should they be true as they seem to be. When the associations realize the apiary inspection is for the good of all the bee-keepers in the State, and not specifically for association members, I hope we shall see an end of such a policy.

The whole trouble is that many good, honest men utterly fail to realize the seriousness of the problem, and have little or no conception of the working out of the details of inspection. Another serious difficulty is that too many bee-keepers look on inspection work as an easy job that can be done when no home work is pressing, and as a means of picking up a few dollars at odd times. This is entirely wrong, and is usually equivalent to misappropriation of State funds. What we seemingly need is a higher degree of civic honesty in the conduct of some of our inspection work, so that only men trained in inspection methods, and well informed concerning diseases, will do the work.

Now as to the results of inspection. Having but an inadequate knowledge of the present prevalence of disease and practically no records as to the efficiency of inspection, it is a difficult task to estimate how much good is being done by this work. Sometimes the task seems a hopeless one, when only a few hundred dollars are appropriated annually, and there are thousands of bee-keepers in every one of our good bee-keeping States. However, the results are, as a whole, good. Perhaps it will be well to indicate this by a couple of illustrations.

In 1897, European foul brood broke out in the Mohawk Valley and spread rapidly. Previous to 1899 colonies of bees were destroyed to the value of $39,383. In 1899 the colonies destroyed because of disease were valued at $25,420. This does not include the decrease in crop nor does it indicate the discouragement to the bee-keepers. The annual loss of colonies steadily decreased, according to the inspection records of the Commissioner of Agriculture. Better than these figures, however, is a comparison of present and past conditions in that locality. It is reported that there were formerly a comparatively small number of extensive bee-keepers in the valley and many uninformed and indifferent small holders. The careless and indifferent bee-keepers are out of the business; the careful bee-keepers were instructed in the diagnosis and treatment of European foul brood by the State inspectors and from other sources, and to-day they have little fear of disease. While there are doubtless less bee-keepers at present than formerly, it is not unlikely that the average annual crop is larger than before the epidemic and the disease has unquestionably served to make better bee-keepers. With a means of instruction and inspection provided, the disease has been an actual benefit, and I think most of the bee-keepers in the valley to-day look on it as such.

On the other hand, in connection with our work on the distribution of disease, we often find it difficult to get any data from certain counties. Those who reply, report that crops are not what they used to be and that bees are starving, that the wax moth (or weevil, as they often call it) is destroying the bees, that the spraying of fruit trees while in bloom has killed off most of the bees, or that fumes from smelters or coke ovens have wiped out the industry. Many of those who do not reply at all probably think the trouble is "bad luck." When a series of such reports are received we usually expect to find that a brood disease has played havoc among the bees in that region and we seldom fail in our predictions. Many bee-keepers seem to try to exhaust all the possibilities in accounting for losses before they suspect disease, and probably the majority of bee-keepers in the United States do not even know that bee diseases exist. Where no means, or inadequate means, of instructing the bee-keepers is provided the result is practically the wiping out of the industry. Such cases exist in plenty all over the United States. To form a perfectly reliable basis for estimating the value of inspection we should, of course, take into consideration the comparative proficiency of the bee-keepers themselves and their familiarity with the literature of bee-keeping, but even without this data it is evident that inspection practically constitutes the difference between recovery from an epidemic and an almost total destruction of the industry. In view of this evident fact there should be no opposition on the part of bee-keepers to inspection, but an earnest effort to make inspection just as efficient as possible. These conclusions should not, however, be accepted as indicating that inspection is all sufficient. What we should ask ourselves is whether the good results follow quickly enough. Under the best of inspection there is an enormous loss before the education of bee-keepers becomes adequate to control the diseases.

Not long since I had occasion to look up the records for 1909 of the New York inspection. There are four good men on the force. Let us see how much they accomplished. According to the twelfth census (1900) there were 22,738 farms in the State on which bees were kept, with 187,208 colonies. This does not include bee-keepers in towns and cities. The absolute accuracy of these figures is immaterial. American foul brood exists in at least 19 and European foul

brood in at least 31 of the 61 counties in the State. There are also seven counties in which American foul brood is suspected and three in which European foul brood is suspected. Taking into consideration the mountainous regions of the State, it is evident that at least threefourths of the bee-keeping counties contain brood diseases. Not all the apiaries in these counties contain disease, but every one is endangered, and at least 15,000 bee-keepers in the State should at once learn about these diseases if they are not already informed.

In 1909 the four inspectors visited 883 apiaries, or on an average 221 each. When it is remembered that the season is short and that for European foul brood the inspection is best carried on in early summer, no more could be expected. They examined on an average of 11,760 colonies each, showing number of colonies per apiary reported in the census was 8+, so it is evident that the inspectors are doing the only thing possible, that is, to try to save those deeply interested. At this rate it will take at least ten years to get around once.

In Illinois there are at least 35,000 bee-keepers, or 13,000 more than in New York. American foul brood exists in 32 and European foul brood in 36 of the 102 counties in the State. The entire force of inspectors put in a little less than 120 days work in 1910, visiting probably not more than 600 apiaries. There are doubtless 20,000 bee-keepers who need help immediately.

These two States are chosen as examples because the systems of inspection differ. In New York the Commissioner of Agriculture has charge of the inspection, which is done by four experienced bee-keepers. In Illinois, in 1910, the Bee-keepers' Association appointed an inspector who picked his deputies and they were legally not responsible to anyone. A new law providing that the inspector shall be appointed by the Governor was recently passed.

I would not have my remarks construed as adverse criticism of the inspectors. The inadequacy of their work is not their fault. We should recognize these conditions and bee-keepers should never feel when a law is passed providing for inspection that the diseases will now be controlled.

Evidently the present equipment in the fight against disease is entirely inadequate. What are we going to do about it? Of course where inspection is not yet provided, efforts will be made to get it; but, are we to stop there?

The forces at work in agricultural education are many, but practically none of them have done anything for the advancement of apiculture. The agricultural colleges and experiment stations can and will help when the subject is adequately presented. The Farmers' Institutes ought to be an important factor in bee-keeping education. All of these agencies can be enlisted through the activities of the National and State Bee-keepers' Associations, but so far few associations have made any efforts along these lines.

Our bee journals are doing a great deal of good, but we must remember that probably not 5 per cent. of the bee-keepers of the country subscribe to them. A much larger percentage read other agricultural papers, and here is a great field largely undeveloped. Practically all of these papers could be induced to publish articles on bees. The associations could also be instrumental in having good men appointed to take charge of regular departments, and by these means much information on disease could be sent out.

But should the associations confine their efforts solely to the enlisting of others to help? Is there nothing for the associations to do? The active Michigan Association sent out recently several thousand circulars on the subject to several

thousand bee-keepers all over the State, irrespective of membership in the Association. This was a good work and should serve as an example to other associations. I realize that lack of funds is a serious handicap, but this can be overcome if an effort is made.

Inspection Methods and Policies.

From a rather wide acquaintance among the apiary inspectors of the United States, it is safe to say that they are, as a whole, honest, hard working, and anxious to be of benefit to their fellow bee-keepers. With few exceptions all of them are practical bee-keepers who have had experience in controlling disease in their own apiaries, and they therefore begin the work with considerable information on disease.

However, it takes more than a mere knowledge of bees and bee-keeping to make an efficient inspector. If I were asked to name the one essential characteristic of a bee-inspector, I should say that it is an ability to handle bee-keepers. Rules for doing this are not found in the bee books, nor shall I attempt to formulate them. It is obvious, however, that an inspector who leaves a diseased territory with the bee-keepers dissatisfied or in an open rebellion has not improved conditions.

Records of the work must be carefully kept, and kept in such a way that they are useful. It does no good to write some figures in a book or on a card unless there is a system in the reports which makes them serviceable. Most of the inspection records are utterly useless because the well known practices of modern business are not applied. It should be possible at any time to report on conditions and compare them with previous years so that the inspector and his superior officers can tell whether he is doing good or where the efforts should be concentrated. A man in the field cannot conveniently keep such records, but the man can make reports which can be recorded and utilized in a central office.

Perhaps one of the greatest weaknesses in our present inspection is due to the fact that the men chosen are uninformed as to how inspection should be conducted. For example, it is quite customary for an apiary inspector to visit a prominent bee-keeper, and then have his host drive him about to visit the small bee-keepers in the vicinity. This is pleasant for the inspector, and usually for his host, but is perhaps open to criticism. It results too often in the belief that the bee-keeper has sent for the inspector to clean out the small bee-keepers, so that he can have a clear field. Other inspectors have been known to take orders for bee supplies, canvass for bee journals, buy up honey, wax, or slumgum, and do many other things which it is perfectly natural for a bee-keeper to do in his private capacity. It is safe to say that not one of the men who do these things is dishonest, and they would resent such a suggestion most emphatically. They are, however, unwise in doing these things. An officer paid by the State should go out to do his one duty, and even urging bee-keepers to join a bee-keepers' association may be, and has been, misconstrued. It is better to avoid even the appearance of evil. It is quite a common thing for bee-keepers to ask the inspector whether he has found any disease in certain neighboring apiaries. Unfortunately most inspectors give such information, which they have no right to divulge, unless they should do so by establishing quarantines, and this is not done. Correspondence should be conducted in a business-like manner from a central office, and in such a manner as not to bring discredit to the work.

It is better, as a rule, for an inspector not to spend the night with some prominent bee-keeper, but to go to a hotel. Unless it will materially hinder his work he should also avoid taking meals with the bee-keepers. These things sound inhospitable, but it should be remembered that the expenses of the inspector are supposed to be borne by the Government, and that the taking of favors from individuals may result in being asked for favors in return which should not be granted. It is also a little better for an inspector not to work too near home for fear he may be accused of working too much for his own benefit.

Above all, it must be remembered that the inspector is a teacher, and his success will correspond largely to his ability to apply pedagogical methods. A man should, under no circumstances, be chosen for such work unless he possesses this ability.

Frequently an inspector will quit the work whenever his own apiary work is pressing. Especially during the honey flow it is hard to keep them on the road. Every bee-keeper knows what it means to be away during a heavy flow, and the only way to get men to stay in the field all the time is to pay them enough to warrant them in staying out. The ideal condition would be to employ men only when they have sold their apiaries, and for the employment to be for the entire year. The time has not yet come when this may be asked for, but it should be possible to combine the apiary inspection with some other Government work so as to remove personal interests from consideration. We need men in this fight whose first thought is the absolute enforcement of the law, and who have an enthusiasm for the welfare of the bee-keeping industry so strong that they will not be turned aside through sympathy or private interests, and who know how to handle bee-keepers even better than they know how to handle bees.

In this Province your inspection is under the supervision of the Provincial apiarist. From the nature of the work it is quite possible and profitable to utilize his efforts during the winter season as instructor in the Agricultural College. In this way he is reaching the younger generation, and it is reasonable to expect that the graduates of the institution who have taken Mr. Pettit's courses will be scattered over the Province, each one to become a centre for the dissemination of progressive agricultural knowledge. It is not only what Mr. Pettit can do directly in educational work, but equally the influence of his students that will benefit Ontario bee-keeping. Devoting his entire time to apiculture, as he does, Mr. Pettit is also able to conduct institutes and demonstrations over the Province, and in a multitude of ways work for the benefit of the bee-keepers.

After all is said and done these diseases are not an unmixed evil. If because of an epidemic the bee-keepers of a region are made better bee-keepers it cannot be considered as entirely a curse. The careless and negligent drop out and the careful bee-keeper becomes better informed. This is the history of all localities where a means of instructing bee-keepers in treatment is provided. Admitting all this, however, our only solution of the difficulty is to redouble our efforts to control the diseases.

I cannot refrain from congratulating the bee-keepers of Ontario on having an equipment in fighting the brood diseases that is not surpassed on the continent, and it would be overlooking a fundamental fact did I not also mention the obvious fact that these benefits have been obtained because this Association has been awake to its duties and privileges. It is a dangerous precedent for your Association to be

so active, for the more that is done the more is expected of you. The problem of disease control and the greater problem of putting apiculture on the proper basis in the Province are tacitly considered as belonging to this Association. I congratulate you on what you have already accomplished, and wish you success equal to your fondest hopes for the future.

There are so many things that have been taken for granted in connection with bee diseases which we cannot prove to be true and there are so many things which have yet to be investigated that it is impossible to answer off-hand the many questions which will come to the minds of many of you. For my part I would much prefer to be in Dr. Miller's class. His favorite answer in conventions and in his writings to various questions, as you all know, is, "I don't know," and he comes about being the nearest honest man in American apiculture that I know of. But if there is anything I do know or have any suspicions about I would be very glad to give them out. (Applause).

THE PRESIDENT: It has been a great privilege indeed to all of us to listen to Dr. Phillips to-night.

A MEMBER: What does Dr. Phillips mean by shaking bees?

DR. PHILLIPS: What I meant was shaking bees from comb into a clean empty hive as shown in the illustrations, compelling them to build new comb in which to rear brood and place their stores and all the other things necessary. The combs contain the infection, that is, the honey is infected, and also the larvae which are diseased are infected, and in treating we remove that infection by taking away the combs.

MR. MCEVOY: This thing of giving one shake and starters won't do. If the yard is in a very bad state with foul brood the weakest ones are so weak they won't be able to store above and hundreds of cells will be filled with honey, and if you disturb and shake them it is necessary to put two or three of these together. Take a whole apiary that is diseased and one shake will not do; but if you let them build for four days and then take that away and give them foundation or let them build again it will do. Concerning the empty hive it can't give it and never did give it. I have had 36 years' experience. It is the honey. The honey must first be stored in the cell where the foul brood matter has dried down.

MR. LOWEY: 99 out of 100 in shaking will shake some of that honey out on the hive, and we may leave the germs in the hive in that way. I think it would be unsafe to let that honey go out without disinfecting the hive.

EXPERIENCES WITH EUROPEAN FOUL BROOD IN THE OTTAWA VALLEY.

F. E. Millen, O. A. C. Guelph.

European Foul Brood has made considerable headway in all directions in the Ottawa Valley since a year ago, and is now found in Carleton County in the following townships: Huntley, Nepean, North Gower, Gloucester. In Russell County, Cumberland Township, Prescott County in North Plantaganet and Renfrew in McNab Township.

In most cases the disease was not suspected by the bee-keeper until his apiary had been inspected and the disease pointed out to him.

Except in rare cases the disease did not seem to do so much damage the first year, but if left untreated, the second year it ruined the colony. I found the worst cases in the yards of the incompetent bee-keeper. The man who tried to understand his bees was in a better position to detect anything wrong, and so, often prevented the disease from becoming as bad as it otherwise would. The germs of disease will always thrive much better in surroundings suited to their requirements, and when we go into a yard and see old combs laying about, from which honey has probably been taken by the bees, we can see how easily the disease spreads.

The bacillus of this disease is very small, and of course invisible to the naked eye. It requires any number from twelve to fifteen thousand placed end to end to make one inch in length, and then remembering that one bacillus is enough to start the disease, and that one will multiply many times in twenty-four hours, we can see that great care is necessary in being clean and thorough in our work in the yard.

Every bee-keeper should spend a little time in reading something of the life and habits of bacteria, and then he would be in a better position to fight these diseases when they made their appearance.

European Foul Brood is costing the bee-keepers thousands of dollars loss every year, and most of this could be prevented by the bee-men if they would give their bees more care and find out the cause when they are doing badly.

I recall a striking instance where a bee-keeper had forty-five colonies, and the disease had made such headway when the bees were examined, that after treating he had only eight colonies left. The loss to this man alone, at a moderate estimate was over $200, and this is one case out of many. Many authorities aver that the black bee is more liable to attack than the Italian. We can easily prove the truth of this statement, by the examination of a few yards in an affected area. Here we find the blacks being wiped out of existence, while their neighbors the Italians were thriving and showing no trace of the disease. The question ensues, why are the blacks so susceptible. I think we can find the solution by tracing the history of the two races back a few years. We find that the largest breeders have gone in for the Italian race, and have raised their standard by selection. This must naturally make them a more virile bee. The blacks on the other hand, have not had this same selection; they have been bred without any method of selection in most cases, and consequently their constitution has been weakened and they have lost their vitality to a marked extent.

The same occurrence can be seen in England, with the Isle of Wight disease. There it is the native bee that went under first, while the more carefully bred Italians have proved themselves more hardy in fighting the disease. Bees are like all other forms of live stock, and a stockbreeder or poultry man would never think of continually breeding without selection or the addition of new blood, and bees should be treated in exactly the same way.

If the bee-keepers want to go in for black bees I believe they could raise a strain that would prove as immune to European Foul Brood as the Italian is at the present time.

They would have to get far enough away from the disease to give their bees a chance to regain some of their lost vigor, and then by careful selection, in course of time a good strain could be raised. Whether such a course is advisable, rests entirely with the producers of comb honey. If they can get a strain of Italians to answer their purpose equal to the Blacks, then the latter could be allowed to die out; otherwise make the blacks as vigorous as the Italian. I believe that if such a course of selection was made that the honey gathering capacities of the blacks would be equal to those of the other races.

The symptoms of this disease are well described by Dr. Phillips, and any one having studied these descriptions carefully and being observant could hardly fail to detect the presence of the disease, except that it was in the very earliest stage. The moment a bee-keeper notices that the larvæ are not of a good color, and not possessing the circular position of a healthy larvæ, then very careful observations should be kept, and on the symptoms developing, treatment should be given. Any case of doubt should always receive the opinions of someone capable of making a correct diagnosis.

Dr. Phillips says there is usually little odor from European Foul Brood. This is true both of the early and latter stages, but when the disease is at its height I have found the odor to be very sickening, and so pronounced that an internal examination was needless. This smell was especially pronounced on a warm day.

When we find a large percentage of the dead brood capped I think it shows that the disease is not so chronic, and that when the larvæ were capped they were not dead. I do not think the workers would cap over dead larvæ. In severe cases there is a very small percentage of the dead larvæ sealed.

In sections where European Foul Brood is present or nearby, I would regard the non-swarming of the bees as a very suspicious symptom, and would by careful examination make sure that European Foul Brood was not the cause of their failure to swarm.

The steps for treatment seem to be shaking and requeening with Italian stock, these from a breeder of repute who has selected his queens from his best colonies.

This is the best treatment to recommend to the ordinary bee-keeper. New treatments should not be recommended until we are certain that they will cure. In my own yard I found that the introduction of good Italian queens gave every appearance of cleaning up the disease, but until I have given it a further trial I would not care to guarantee that it is a cure as some suggest. Too many bee-keepers take for granted that what they are told, or what they read, is correct, without attempting to prove it for themselves, so for that reason I think we should be careful in advocating a new treatment, unless its success has been definitely proved. While treatment is the only remedy when the disease is actually

present, there are other steps that can be taken to prevent the spread of the disease. The formation of Bee-keepers' Associations, either township or county, are good movements in the stopping of the spread of the disease, and not only help in the disease problem, but also go to make more efficient bee-keepers. In support of these organizations I would like to quote an instance that I saw during the past season. There were two bee-keepers, not twenty miles apart, both running apiaries in equally good locations, they each had about one hundred colonies. The one belonged to a Bee-keepers' Association, the other did not. The former had read about European Foul Brood, and last season made just over thirteen times as much as his neighbor, and besides this he requeened the greater part of his yard with Italians, while the other man will probably wait until European Foul Brood cleans him out before he makes a move.

I found the demonstrations very much appreciated, and where I was able to treat a colony actually having the disease the bee-keepers seemed to have a much clearer idea of how to proceed themselves.

Where the bee-keepers treated early there was little loss of the season's crop, but if the treatment was left too late, the yield was considerably decreased. wherever the bees were shaken only and not requeened, the disease broke out again almost at once. The shaking seems useless without the requeening, and early treatment is far more profitable than later treatment.

EXPERIENCES WITH EUROPEAN FOUL BROOD IN THE NIAGARA DISTRICT.

JAMES ARMSTRONG, CHEAPSIDE.

So far as the Niagara district is concerned the disease has not covered a great deal of ground there yet. The first we knew of any European foul brood in the Niagara District, the Department got word that there were bees being moved from Buffalo into Fort Erie, and as soon as they found that out they asked me if I could be there on the 22nd of April. A good many think that is too early to look for foul brood, but I think it is never too early. I found out where the bees had been taken and went up to the man's place and told him my business. He had been in the bee business in England, and he showed me a certificate he had received there as a bee-keeper. I enquired about the conditions of his hives, and he told me there were one or two apparently dead. I opened one up, the first I picked out, and I saw what had happened. I shut up the hive and went to the house and we talked the matter over, and I advised him to melt everything he had. He seemed satisfied to do anything I told him and promised he would.

Mr. Herschiser said yesterday the foul brood was brought over at this time, but I think there was another lot of bees brought over the year before, and stayed there all summer, and were taken back again, and I think that is where we got the first start. I think the one spoken about yesterday was not the original.

MR. HERSCHISER: I didn't know of any other.

MR. ARMSTRONG: It is my opinion that is where it got the start, the year before, in 1909. In speaking of Grand Island, I went along the frontier at Grand Island and Black Creek, and I thought we would get it there sure, but I could not find anything down along there at all. The only place I could get

any was at Fort Erie, and during this time this summer and last summer we found it ten miles north-west of Fort Erie right straight along. The district seems to be five or six miles wide, and about ten miles in length, that would be about fifty square miles. It seemed to be spreading rapidly, and the remarkable thing about it was that if it was in the yard we would find it in nearly every hive. There was one man at Stevensville who had 35 colonies, and he was like the man that Mr. Miller spoke of, some of his hives had never been opened since they were made, but he didn't notice anything wrong. He seemed quite indifferent about it. I don't know whether it was because he didn't like the looks of us; but after we got through we found out how things were, and reported there was European foul brood in every hive in the yard. Then he seemed to change his mind and didn't know what to do, and wouldn't promise to do anything. That is where we have a great deal of difficulty. There are so many that will not do anything until they are forced to do it.

Mr. Millen has covered the ground thoroughly. I have not had a great deal of experience, only two summers. It has spread very rapidly; American foul brood is not in it with European foul brood for spreading.

MR. LAING: Do you mean in the Niagara district?

MR. ARMSTRONG: It certainly is, and it will strike Mr. Laing's before long. I was going to ask Dr. Phillips how he thinks it is that it spreads so rapidly, in comparison with the American foul brood. We found that in any district where there was a chance of European foul brood being in a yard at all we would find it was in every colony. With the American we don't find that. I have often gone into yards and found one hive infected and no trace of it in another hive, but it seems when the European gets into a section it takes in everything.

MR. MCEVOY: Don't you think an inspector should be given a free hand to examine bees at any time?

MR. ARMSTRONG: I think so. I think any time that you can examine bees is the time to look for foul brood, and we ought to be at it all the time till it is cleaned out.

MR. HERSCHISER: I would like to ask what proportion of the apiaries in the district that you examined along the Niagara frontier was affected? Are they all affected in the area you mentioned?

MR. ARMSTRONG: Yes. In every yard, except one, we found traces of European foul brood, and the yard in which we did not find it was one of about six colonies.

MR. HERSCHISER: How many of those yards have been treated?

MR. ARMSTRONG: That is what we don't know. We have only so long to be out and as soon as our time is up we can step out and go home.

MR. HERSCHISER: What is being accomplished to keep it from spreading?

MR. ARMSTRONG: It is going on and on.

MR. HERSCHISER: Does it do any good to make the inspection, and advise the bee-keeper that it is there and then drop it?

MR. ARMSTRONG: I do think it is an advantage to do even that, but we do not go far enough. I think it is an advantage this far, that there are a great many of these people that never saw a foul brood in a hive of any kind, and if you point it out to them, and if a man has got the interests of his property at heart at all, he will look after it. It is not only foul brood we tell them about. We help them in every line connected with the bee business. Every question they ask us we try to answer. and tell them the best way as far as we know.

Mr. Herschiser: Knowing the apiaries and bee-keepers in the way I do along the line, I do not believe that there will be any bees or any bee-keepers left in that country in two or three years.

Mr. Armstrong: That is my opinion. All the small bee-keepers will be wiped out, and I think the sooner the better for all concerned.

Mr. Sibbald: I would like to ask you if there are any Italians in that neighborhood where you inspected, or are they all black bees?

Mr. Armstrong: Hardly any Italians at all.

Mr. Sibbald: Did you find any affected by the disease?

Mr. Armstrong: I did not find a pure colony of Italian bees in that section. There was no European foul brood in Niagara Falls that we could find, and it has not got very far down the river yet. We could find nothing at Chippewa Creek below Grand Island, but there seems to be a streak running from Fort Erie and Bridgeburg right in a north-west direction about five or six miles long and about ten miles wide. In the south-west direction we did not go more than a mile and a half and we could not find any.

Mr. Herschiser: Have you found foul brood spreads mostly in the direction of the prevailing winds?

Mr. Armstrong: No; not at all. You know the prevailing winds in that section are from the south-west.

A Member: Why not destroy all diseased colonies the same as diseased hogs, and not try to cure them at all?

Mr. Armstrong: I think that would be a waste of property. I do not think it would be right or necessary. However, in Fort Erie last spring I think it would have been a good thing if the Government had bought every colony and destroyed it.

Mr. Sibbald: One very encouraging point about this disease is that it does not seem to attack Italian bees. It seems to be working in districts where they have never paid any attention to the breeding of their bees, and where they are all black. That gives me great encouragement, and I think it will a lot of bee-keepers who attend this convention every year, because they have Italianized their bees.

Mr. Timbers: I think the disease should be headed off instead of running behind afterwards. I think that is where the inspectors have made a mistake. If Italianizing will stop it, and get ahead of it, let the bee-keepers get Italian queens and head it off, and not chase after it and tell the bee-keepers what to do.

Mr. Millen: The Foul Brood Act gives us no power to do anything at all unless we find foul brood present. We all know how hard it is to get a man to spend $50 or $60 for Italian queens until he is driven to it by the disease striking his yard.

Mr. Armstrong: I think the Government has done a great deal for the bee-keepers in the last four or five years. We are not, perhaps, getting rid of foul brood very fast, but we are helping the bee-keepers. I think the meetings of yesterday and to-day show that the bee-keepers are taking a greater interest.

Mr. Haberer: About a year ago I noticed in the *Bee Journal* that in Switzerland they have the contrary opinion as to resistance to foul brood. I read a certain report, and the report showed that the Italian bees there were not nearly so resistant as black bees, and there is another thing, they are breeding many black bees in Switzerland and Germany. They have more confidence in the black bees now, and they made the remark that it was rather astonishing and amusing to them that in America they found the Italians more resistant to the disease than

the black bees. They have just the contrary opinion. It may be as Mr. Millen says, they are breeding more black bees than Italians.

Mr. McEvoy: I cannot quite agree with the gentleman on the blacks, because they are the most miserable feeders of larvae of all the lot. After your brood dies it lies there and spring dwindling follows, and look out that you do not get something that will clean out the bee yard. The Italians are the best feeders of larvae; they are better housekeepers and feed their brood better.

Mr. Evans: I would not worry at all about what they do in Germany and Switzerland. It seems to be well established that the Italians are the best to resist foul brood in Canada and the United States.

Mr. Tyrrell (Detroit): Mr. Haberer is absolutely correct with reference to the opinion of the Switzerland authorities on black bees. Dr. Brunnich is considered an important authority; he will rank in Switzerland equal to any of the leading bee-keepers on this side of the waters, and we might be surprised to know that there are people in the United States importing the bees from Switzerland. It was a surprise to me; I never dreamed of such a thing, but I remember that when I first began bee-keeping all the bee journals and the bee-keepers told me to adopt the eight frame hive. I did, not because I had given it any trial but because everybody said it was the proper thing. Now the same thing is true of the Italian bees, we have all talked of it and it has been advocated as being the only bee; but is it possible we have got so far on one side of the fence that we cannot see on the other side if someone knocked the board off. I would not champion the black bee: it would be suicide to me here. We must not shut our eyes to these things and say such and such a thing is so until it is so. If the black bee has more resistance against European foul brood in their country, and if, as I know to be a fact, there are people in the United States importing the bee from Switzerland, we had better look into this thing, and find out whether all that has been said against the black bee is right, and all that has been said in favor of the Italian bee is true. In my travels I have found lots of champions of the black bee, and merely because the argument was all the other way we kept the black bee out of sight.

Mr. Lowey: I claim the black bees are a strong sturdy race. I claim they wipe out the Italians where they get a chance. I have tried to find out where those superior Italian bees were produced; they are botches at comb honey. Mine are not pure blacks, they are cross bred, but they will gather two pounds to one of the Italians.

Mr. Howe: I never condemn the black bee, but in every case, and even in Switzerland they are talking of the German bees. They are brown; they are not black bees that we are talking about. They are large brown bees, and those bees are almost as quiet as the Italians, and with almost the same characteristics as the Italians. It took me ten years to decide against those bees, and I have been sorry ever since that I destroyed the colony. There are just as poor Italian strains as black, but the gentleman here spoke about the natural selection. One thing that makes the black bees weak is where they let them swarm. The poorest bees swarm the most, and you multiply your poor colonies faster than you do your Italians.

Mr. Herschiser: I think I understood Mr. Tyrrell to say he was going to stick to the blacks; but I want to say that when European foul brood strikes him he won't stick to the blacks, for he will be out of business unless he gets the Italian that will resist it. I am a veteran European foul brood fighter. I have

been through the mill. I have increased 52 colonies to 110, and have crops of honey from them every year, and I have done that by the selection of my best Italian stock. I have found every colony that showed black blood has been attacked by foul brood, but by selection I have a strain of Italians that will not only fight the disease but are good honey gatherers. This was a poor season for honey, but in this particular yard of Italians I have had some colonies store as high as 192 sections of honey. If I can have bees that will do that I do not want blacks.

THE INSPECTION OF APIARIES IN ONTARIO.

By Morley Pettit, Provincial Apiarist, Guelph.

The Act for the Suppression of Foul Brood among Bees, passed by the Legislative Assembly of the Province of Ontario, provides for the appointment from time to time, of Inspectors of Apiaries by the Lieutenant-Governor in Council upon the recommendation of the Minister of Agriculture.

The supervision of the work of these inspectors falls largely to the office of the Apicultural Department of the Ontario Agricultural College. The office work during the winter of 1910-11, consists in copying Reports of Inspection of 1910 on the individual cards of the bee-keepers in the Card Record, also filing the original reports by counties and townships and by the names of bee-keepers for easy reference to individual cases when necessary. This required considerable attention during the whole winter.

Early in the spring a circular letter was sent to nearly 5,000 bee-keepers in Ontario warning them of the danger of spreading disease by robbing, and advising all owners of bees dwelling in box hives to make preparations for transferring all such into modern hives during the swarming season.

About this time the Apiary Inspectors for 1911 were appointed and assigned to their respective districts. There are sixteen of these, including three special students in Apiculture at the Ontario Agricultural College.

The following letter of instructions was sent to each inspector at the time his appointment was announced:

May 22nd, 1911.

"Dear Sir,—You have no doubt been notified of your appointment as Inspector of Apiaries for 1911.

"Owing to the prevalence of disease in certain sections of Ontario, and the limited funds at our disposal, you are requested to visit only such apiaries as you have strong reason to suspect are infected with foul brood. The work should be completed as early as possible in July, with due respect to the fact that inspection can only be properly done when honey is coming in. In cases where foul brood is being treated, to effect a cure, periodical inspection should be made until such time as all cause for apprehension is removed. The first apiaries to be visited should be those where disease has been reported in former years, whether cured last year or not, and if still diseased, the neighbourhood should be thoroughly gone over.

"To save time and expenses the inspector should endeavor to complete one inspection of each neighbourhood at one trip.

"The results of each inspection made must be reported within one week to the Department. Forms for making reports will be supplied you, and each apiary must be made the subject for a separate report.

"Care should be taken to obtain all the information asked for in the report blank. Your visits as inspector are almost the only means we have of gathering statistics of bee-keeping in Ontario, which will be valuable in many ways to the industry. Even if

some of the information is difficult to obtain, kindly secure it if at all possible. The Provincial Apiarist is preparing a detailed report on bee-keeping as one of the industries of Ontario, and asks your hearty co-operation.

"We are sending you under separate cover lists of bee-keepers in your district. The numbers opposite the names are the number of colonies kept, and the letters A. or E. represent A.F.B., or E.F.B., as the case may be. As these lists are obtained from various sources they are liable to error. Kindly correct them and add as many more names of bee-keepers as you can, with their post offices. These lists are confidential, and are not to be given to anyone else without the consent of the Department.

"You are not expected to visit all the bee-keepers on these lists; only those where disease is suspected, and unless advised to the contrary, you will need to restrict your work to twenty-five days.

"Wishing you a successful season's work, I am,

"Yours very truly,

"MORLEY PETTIT,

"*Provincial Apiarist.*'

The first week in May a Short Course was held at the Ontario Agricultural College especially for the purpose of giving some final training on the symptoms and treatment of disease to the new Inspectors. Dr. E. F. Phillips, Ph.D., in charge of Apiculture for the Department of Agriculture at Washington, D.C., kindly acted as the leading lecturer on disease at this course. His daily talks, illustrated by the use of specially prepared lantern views were very helpful. In addition to disease treatment, other practical instruction was given. This course was attended by about forty students in all, including nine of the sixteen inspectors. Sixteen different counties of Ontario were represented. As a number were hindered from attending by pressure of work at home at that season of the year, it has been arranged to hold the next Apiculture Short Course January 9-20, 1912, at the time of the other Short Courses.

The pamphlet on Foul Brood used by the inspectors for distribution from year to year was also revised and enlarged during the winter and issued as Ontario Department of Agriculture, Fruit Branch, Bulletin 190, "Bee Diseases in Ontario." It was sent in May to the mailing list of 5,000 bee-keepers, and also distributed during the summer by the inspectors among those who had not yet received it. This free distribution of literature is found to be a great help in the educational campaign which forms the greater part of the inspectors' work.

The main new feature of the work for 1911 was the series of Apiary Demonstrations conducted by the Provincial Apiarist, the apiary inspectors and others under the auspices of the Apiculture Department of the Ontario Agricultural College, and with the assistance of the local associations. The value of such demonstrations in apparent. The average person learns how to do things far more quickly by seeing them done than by being told how. The inspector cannot afford to show everyone individually how foul brood is treated. He must simply give an explanation, leave printed instructions and go on. But if a score or more people, by appointment, meet in an apiary, he can meet with them and show the lot of them at one time, exactly what the disease looks like, how it should be treated to cure, and how the wax can be saved from the diseased combs. Apiary demonstrations were held at the folllowing places:—

County.	Place.	Number present.	County.	Place.	Number present.
Brant	Gainsville	50	Oxford	Wolverton	11
"	Paris	35	"	Tillsonburg	15
Carleton	Burnstown	30	"	Tavistock	27
"	Leitrim	30	Prescott	Curran	25
"	C. E. Farm, Ottawa	45	Russell	Cumberland	12
Dufferin	Orangeville	33	Simcoe	Thornton	20
Elgin	West Lorne	40	"	Hillsdale	20
Essex	Essex	50	Welland	Fonthill	30
Glengarry	Lancaster	20	Wellington	Hollen	17
Hastings	Crookston	40	"	Metz	14
Huron	Zurich	12	Wentworth	Lynden	few
Northumberland	Frankford	40	"	North Glanford	few
Oxford	Ingersoll	10	"	Hamilton	18
			York	Islington	75

Twenty-seven demonstration meetings were held in 17 counties. They were remarkably well received by the local bee-keepers, the average attendance being about thirty.

Great credit is due the *Canadian Bee Journal,* and also local newspapers all over Ontario, for advertising and reporting these meetings.

Another feature was the employment for the first time of men from the Agricultural College on inspection work. The necessity for making some change has been evident for several years. Our best inspectors have been dropping out from year to year becuse they found it more profitable to look after their own bees than to go out in the busy season and attend to their neighbors' bees. It has been very difficult to fill their places and supply the demand for more inspectors with competent men. At the same time there are bright men studying at the College who purpose making a business of bee-keeping. They are there where we can give them special training for the work, and they will have their summer free to devote their whole attention to it. Having no established business which must be neglected when they go inspecting, they do not require so high a wage for their time. Their expenses are also materially reduced by using the College rate of one cent per mile on the railways. The employment of three College men during the season has shown that with some revising the plan can be worked with good success. The greatest difficulty is to hold these men for the inspection work. One of them has already bought bees for himself, and the other two are expecting to buy next year. It certainly shows that they have confidence in the business they are undertaking.

The inspection season was marked by a greater interest on the part of the bee-keepers and inspectors than ever before. More letters than usual were received from bee-keepers who wanted their neighborhood inspected. These requests received as prompt attention as possible. After attending to such special cases inspectors are advised to visit only such apiaries as were strongly suspected of being diseased. Apiaries found clean last year were by no means to be gone over again. This restriction is absolutely necessary because of the limitations of the appropriation.

Work began on the fifteenth of May and was mostly completed by the end of June. At that date the appropriation was found to be so nearly used up that the inspectors were requested not to undertake any new work unless specially notified. At the same time, each inspector was advised that if he had special cases still needing attention he should report them at once to headquarters. Several of these were reported and in every case received prompt attention so long as the money lasted.

Each inspector was requested to complete his work as early as possible in July. The importance of this will be seen by every bee-keeper who has had experience in treating foul brood. The shaking method of treatment is practically the same as making an artificial swarm on starters. Colonies treated early in the swarming season and made strong by uniting where necessary will thrive and work about as well as early swarms. Colonies treated after the swarming season is over require as much nursing to build them up as swarms hived at that time. Even where a fall flow follows the bee-keeper would rather have cured colonies with combs built ready to take advantage of it than colonies depleted by disease and compelled to build comb and stock up for winter.

With this in view the Department does all in its power to get the early weeks of the inspection season used as fully as possible by inspectors. During the season of 1911 some of the inspectors were unable to do much work at that time because of their own work at home. The result was that a larger share of the money was used in districts where the inspectors were able to go to work at the proper season and so put the money to best use.

The following tabbe shows the time spent by inspectors before and during the early part of the swarming season:—

Week.	Inspectors working.	Days' work.	Per cent. of Full Time.
May 15–20	5	15	20%
May 22–27	6	12	15%
May 29–June 3	6	21	26%
June 5–10	10	32	40%
June 12–17	11	45	56%
June 19–24	12	37	46%
June 26–July 1	12	38	47½%

Owing to illness, one of the inspectors was unable to do any work. This leaves fifteen inspectors with a possible 80 days' work each week. It will be seen that in not a single week did all the inspectors work even one day each, and there was only one week of these important inspection weeks when as much as half time was put in. This is largely accounted for by the inspectors being busy at home; so if any districts having much foul brood did not get their share of attention the Department can hardly be held responsible for the neglect.

There is nothing specially new in the disease situation. American Foul Brood is still with us. Some bee-keepers are keeping it in check or getting rid of it. Others are not. A more rigid enforcement of the law will be necessary before great headway can be made. Bee-keepers who fail to carry out instructions of inspectors should have the conditions of section 3 of the Act pointed out to them, and enforced. This section provides that "Wherever the said inspector is satisfied of the existence of foul brood in its virulent or malignant type, it shall be the duty of the Inspector to order all colonies so affected, together with the hives occupied by them, and the contents of such hives, and all tainted appurtenances that cannot be disinfected, to be immediately destroyed by fire under the personal direction and superintendence of the said Inspector." It will be seen by this that the primary remedy provided is fire. It is only in cases where "the Inspector has reason to believe that it may be entirely cured" that he "may, in his discretion, omit to destroy." Now in this work the Inspector is the "doctor" but not the "nurse." The appropriation will have to be very much increased before the Department can provide nurses and hospitals as well as doctors for bees. In the

meantime the diseased material which owners fail to clean up within a reasonable length of time should, in the interest of other bee-keepers, be destroyed.

The disease known as European Foul Brood is carrying out its own programme according to schedule. Steadily, and not slowly, it is spreading from the centres already reported, until the following counties are now affected:—Carleton, Russell and Renfrew, Northumberland, Hastings, Prince Edward, and Welland. A slight outbreak was reported in York. The only remedy is to introduce some other race of bees than black bees. Italians have been most thoroughly tested and found almost immune to this disease. Carniolans are reported by some to be quite as good as Italians in this respect. An extra amount of work was done by inspectors in the counties named, principally along the line of urging the introduction of Italian queens. Those who have heeded the warning are pulling through and recovering lost ground. Black bees are, of course, being exterminated. A series of bee institutes should be held in these and adjoining counties in order to warn bee-keepers of the approaching scourge and give them an opportunity to be prepared.

The following table shows the inspection work done in the different counties:—

County.	No. Apiaries visited.	No. Apiaries found diseased.	Total No. Colonies in diseased Apiaries.
Brant	29	4	74
Bruce	16	8	335
Carleton	89	46 E.F.B.	688
Dufferin	2	2	36
Durham	4	1	107
Dundas	28	4	136
Essex	11	5	45
Frontenac	6	2	282
Glengarry	11	.....	.....
Grey	101	42	980
Haldimand	2	.....	.....
Halton	6	3	70
Hastings	71	36 E.F.B.	520
Huron	13	.....	.....
Kent	10	2	110
Lambton	7	4	98
Leeds	34	.....	.....
Lincoln	28	2	5
Manitoulin	25	6	90
Middlesex	4	1	65
Norfolk	3	1	140
Northumberland	52	38 E.F.B.	426
Ontario	5	3	17
Oxford	38	18	345
Peel	3	1	.....
Perth	65	21	136
Prescott	6	1 E.F.B.	60
Prince Edward	46	28 E.F.B.	414
Renfrew	7	4 E.F.B.	6
Russell	56	21 E.F.B.	532
Simcoe	75	32	419
Stormont	1	1	17
Victoria	7	4	362
Waterloo	6	2	14
Welland	66	38 E.F.B.	532
Wellington	15	6	131
Wentworth	20	10	253
York	45	17(1 E.F.B.)	421
Total	1,013	414	7,806

Brant county bee-keepers took the law into their own hands in a very commendable way, and used some of the funds of their thriving association to pay for inspection work in addition to what the Department was able to do for them.

In Carleton the disease is all European Foul Brood. Mr. F. E. Millen, Inspector for that district, reports as follows, his report having reference to the counties of Prescott, Russell and Renfrew as well:—

"European foul brood is the great enemy of the bee-keepers in almost every part of the territory, and causes much anxiety to the bee-keepers, especially where the treatment for its cure is not thoroughly understood or carried out.

"The bee-keepers with few exceptions were glad to see an inspector and rendered all possible assistance, knowing that the visit was made for their good and not for destruction only. The men, where disease was found, who treated and re-queened early suffered little loss from E.F.B., but those who left the treatment until later in the season lost the greater part of their honey crop, while some who shook but did not re-queen had the disease reappear.

"As a symptom of E.F.B., to the bee-keeper who has little experience or time to look at the interior of the colony, I would add, that the entire or almost entire cessation of swarming should be looked upon with suspicion until the colony has been examined; this especially refers to sections where E.F.B. is present.

"In some districts the bee-keepers are Italianizing ahead of the disease, and if this becomes common, must help to stop the spread of the disease to some extent.

"The formation of Bee-keepers' Associations, too, is a good move, both in fighting the disease and educating bee-men. I would like to give one instance. In one section there is a bee-keeper with about one hundred colonies. Last year he sold over $1,000.00 worth of honey. He belongs to an association. In the second case, not twenty miles away, there is another bee-keeper, also having about one hundred colonies. Last year he sold just over $100.00 worth of honey, and he was pleased. There was no organization in that district.

"The demonstrations as carried out during the summer seemed very popular, especially in those places where the disease was seen, and treated as part of the demonstration. A practical demonstration of the disease and treatment seem to make it more easily distinguished and treated by the bee-keeper himself.

"Although E.F.B is spreading rapidly throughout the territory, it has been proved that where thorough treatment has been given the disease has been conquered, and so gives us hope that the day will come when E.F.B. shall be a thing of the past.

"The bee-keepers want a greater education on the value of keeping bees for profit, and not merely for satisfying the need of the house for a little honey. Too few bee-men realize how much work a colony of bees really will do if given the opportunity during the honey flow."

Mr. John Artley, of Blantyre, the inspector for Grey County reports that bee-keepers in his county appreciate the inspection work to its fullest value, saying that it is doing the country hundreds of dollars worth of good.

Mr. W. A. Chrysler, inspector for Essex, Kent and Lambton found a few new cases of foul brood in each county. The season being a poor one for honey it has been more difficult to cure, and many would rather loose their bees than tackle the job. Mr. Chrysler suggests that the average bee-keeper cannot cure foul brood and have it stay cured, and states that other measures than what are now used will be necessary to rid the Province of the disease.

Col. I. B. Checkley, inspector for Lennox and Addington, Frontenac and Leeds, states in his report that he found foul brood in two apiaries in Frontenac. Owing to the cold wet spring followed by prolonged drought during the honey season and the entire absence of basswood honey he reports the poorest season for honey for many years. Notwithstanding the information which has been freely distributed among bee-keepers he found many who never opened a hive unless to put on or take off the supers. Col. Checkley recommends that every apiary in Ontario should be inspected at once and diseased colonies immediately destroyed or removed to quarantine stations where they could be treated by the inspector,

charging the expense of transportation to the owners of the bees. He considers that the Ontario Bee-keepers' Association should send a delegate to the next session of the legislature in order to ask for an increased appropriation for the inspection of apiaries. Col. Checkley also feels that the pay of the inspectors is not sufficient to secure good men for the work, considering the busy season during which the work must be done.

The inspector for Manitoulin, Mr. Herbert Dougherty, reports as follows:— "In the course of the work I met with American Foul Brood and Pickled Brood. An inspector on this island has many disadvantages, namely, bad roads, also long distance to travel and have to drive to each place. I think this is a splendid district for the bee-keeping industry. In fact, I may say the best in Ontario. But the Inspector is given too limited a time to give the work the attention he should."

Mr. Warrington Scott, inspector for Northumberland, Hastings, Prince Edward and Peterboro, has given us the following report:—

"My report for the season of 1911 is as follows:—I did all my work in Northumberland, Hastings and Prince Edward Counties. I did not visit Peterborough County.

"I found European foul brood greatly on the increase; I was unable to cover all the diseased territory, so I do not know the exact number of square miles affected, but I believe I am safe in saying that it covers fully one thousand five hundred square miles. I found that the bee-keepers who Italianized ahead of the disease were well paid for the investment, as the disease made much less headway, and in most cases the shaking treatment could be avoided. To Italianize ahead of the disease is the best thing that can be done to check the disease. I found that the bee-keepers are taking a greater interest in Italianizing this year than ever before; they are waking up to the fact that they must Italianize or go out of bee-keeping. The disease has reached such proportions in my district that I think there should be at least one inspector for each county.

"I would say to those who expect to have European foul brood to contend with in the near future: Don't grow discouraged, but prepare for the battle by Italianizing your bees, and keep only strong colonies; then you will be in the best possible condition to fight the disease. In this neighbourhood where the disease first broke out we are getting our colonies back to their original number as when the disease first commenced in 1907, and are getting a higher average of honey per colony than ever before. This is due mostly to the improved strain of Italian bees we now have."

In Perth and Waterloo counties, Inspector David Chalmers began work on May 27th, and finished up on the 6th of July. During that period he put in 16 days in which he visited 75 apiaries representing 502 colonies, 250 of which he inspected and found 60 diseased with A. F. B. Mr. Chalmers states emphatically that his mind is unchanged about the need of quarantine stations.

Henry Johnston, who is inspector for Simcoe and Muskoka, visited in 1911, 107 apiaries in which he examined 891 colonies. Thirty-four of these apiaries were found diseased, but were all left clean on the second visit.

In York county one case of European Foul Brood was reported by inspector H. W. Burke. In this case all diseased material was immediately destroyed by fire. Mr. Burke states that there is enough disease in York county alone to keep one man going the full season and do the work properly. He states very emphatically the need for increased appropriation for inspection work.

Wentworth and Lincoln were in charge of R. C. Fretz, one of the College men, who reports as follows:—

"My work for the season of 1911 was confined mostly to the Counties of Lincoln and Wentworth, although I assisted Mr. Armstrong for a week or so in Welland county.

"Lincoln County is almost free from disease, as I found only two infected apiaries. These cases were in the hands of men who handled it carefully, and at my second call this fall there was no sign of the disease.

"In the County of Wentworth I found disease in the apiaries to a much greater extent. Generally speaking, I believe it is diminishing slowly. From my observations, I believe that this slow decrease is due to a lack of knowledge of the true nature of American foul brood, thereby causing a lack of thoroughness in its treatment. In some of these apiaries disease has been lurking for years, in spite of the fact that the same apiaries have been treated almost as many years. I tried to impress upon these people the fact that by a more careful treatment and thorough cleaning up they might reduce the returning disease to a minimum.

"In the County of Welland, the disease known as European foul brood has been spreading at a considerable rate, as will be seen by Mr. Jas. Armstrong's report. I might say that in consideration of the fact that European foul brood was spreading toward the north, I sent out a circular letter to the bee-keepers of Lincoln County, urging them to insure their apiaries against European foul brood by Italianizing before the disease gets a start.

"With regard to the situation in the vicinity of Thorold, I may say there are a very discouraged lot of bee-keepers. Several of them having stock worth $1,000.00 and over have had to step out of the business, as well as lose their live stock. I have only one suggestion to offer, and that is, that the Lincoln and Welland County Bee-keepers' Association take the matter up at once, if they have not already done so.

"I did not hear any complaints as to winter loss. Bees as a rule were quite strong and built up well in the early part of the season.

"The honey crop, although not poor, was a little below the average. The first flow was short and fast, but was cut off on account of the severe dry weather which prevailed in the Province. There was little or no fall flow."

I think it is to a large extent the breeding of the bees that is responsible for the cleaning out of the disease. The point Mr. Haberer has made is that in Switzerland they are breeding for brown bees. They are proud of their native bees, and they are breeding for a good strong type of brown bees. The same is the case amongst a lot of bee-keepers in England. I do not know just how to reconcile the two, but in England the reports show that the Isle of Wight disease is not resisted so well by the native bees as by the Italians, but it is largely a matter of race. Carniolans have come up for discussion, and some have contended that Carniolans are as good as blacks. One point brought out by the Dadants is that the Carniolans and the other races are not so easily distinguished from the common bees as the Italian, because they are all so near of a color, and on that account the Dadants chose the Italians, because you could tell an Italian whenever you saw them by the yellow stripes.

Mr. TIMBERS: Would it be possible to get the necessary power for a local association to appoint an inspector?

Mr. PETTIT: No. The powers of the inspector are very great, and an inspector can be appointed only by the Lieutenant-Governor in Council, but you could go on inspecting, and where there was any objection raised we could send an inspector as a referee.

Mr. COUSE: In our district we all know the disease, and we can examine any yard where we think foul brood exists. I think Mr. Sibbald will bear me out. I think that is the greatest way of educating people as to foul brood, and when foul brood comes along we know it.

Mr. PETTIT: I think it is better where you have a competent man who has no interest in the community, and you send him to examine the apiaries, and not expect him to take the bee-keeper's word. It is the duty of the inspector to go and examine the apiaries. In a number of cases he does not need to go through the apiaries because he knows the man, but he is not expected to report to us that he has examined the apiaries when he has not done so, and we understand how these things go. You could go as a neighbor, and if your neighbor is willing to have you look through his bees well and good. If he is not, and you have reason to suspect foul brood there, simply write a letter to the Minister of Agriculture,

Parliament Buildings, Toronto, and within a very short time an inspector will be sent to look after the case, and it is those that expect the most who get the most.

Mr. CHISHOLM: Where an inspector has visited a man's apiary and advised him, and he does not do the work, is the inspector justified in burning?

Mr. PETTIT: That point is fully covered by the Act. The Act provides that the inspector, when he finds the disease, if it is in its virulent type, shall destroy by fire everything that is diseased. The interpretation of that is not that every inspector is to go and destroy everything he finds diseased on the start. According to the next clause if he has reason to believe the apiary is able to be cured he is to give instructions first for its curing, and then come back again in a short time and see what has been done, and as long as the man is making his best effort to get cured up, encourage him along. As soon as he finds for any reason the man is not making his best efforts to get it cleared up he is recommended to destroy. It seems to me that method would do away with a great deal of expense to which we are put in sending inspectors year after year to examine the bees of the same man time and time again. If at the second visit we found nothing done there should be a nice little bonfire and all the neighbors would learn about it and something more radical would be done.

Dr. PHILLIPS: In reply to Mr. Armstrong's question as to why European foul brood spreads so much more rapidly and generally than American foul brood, I do not know, but there is one thing we do know, that it takes a great deal less time for European foul brood to appear in a colony after that colony has been subjected to infection. American foul brood will appear in about from nine to fourteen days from the time the organisms are introduced into the colony, and in the case of European foul brood after the cause of the disease, whatever that may be. After the infected material is introduced to the colony the disease appears in two or three days. That does not explain the thing fully by any means, but it is the experience of inspectors in European foul brood regions in the United States that in districts where European foul brood occurs we usually find from 65 to 75 per cent. of all the colonies infected with the disease. I went with one inspector on a short trip through one of the regions through which we found every apiary to contain the disease and every colony in every apiary to contain the disease. They were small ones it is true, but we found 100 per cent. In the American foul brood regions on the other hand we usually found that about ten per cent. were infected. These are regions in which nothing has been done, and at the first inspection that is the case. I would like to call attention to the results of inspection in one of our States. Take the State of Indiana. We have recently taken into our office Mr. George S. Deemeth, who was inspector for Indiana, and I do not believe they have any better inspectors than Mr. Deemeth was. We have recently been going over the records of some of his work and it is very instructive and encouraging. In the counties inspected in one year he would find ten per cent. of the colonies infected with American foul brood, or if it was European foul brood he might find 65 or 70 per cent.; if he went back into the same county next year he would find there was not within 25 per cent. as much disease as he found the first year. That is the encouraging thing about it. When he went into a county and made an inspection one year and instructed the bee-keepers, if he sent a deputy back the next year they would find not nearly so much disease as he found the first year; and even if your inspector can cover only a small territory or see only a few men the good he does far surpasses the actual number of colonies

inspected or the actual number of men he sees, and that means that the good work is spreading, and every bee-keeper who is thoroughly instructed by the inspector becomes a spreader of the good news. The inspector has accomplished a great deal more good than is represented by the figures.

THE PRESIDENT appointed Messrs Corneil, Armstrong, Chrysler, Sibbald, Pettit, E. H. Clare, and J. L. Byer as a Committee on Foul Brood to make suggestions to Dr. Hewitt.

Mr. CHISHOLM: Last year there was a motion spoken of to be brought up and recommended as to the time for spraying trees, to cut out the words "full bloom" and put in simply the word "bloom" so that at any time throughout the blooming of apple or other trees they should not be sprayed. I do not know whether that has been carried into effect or not, but I think that should be thought of and considered, because oftentimes I have seen them spraying in orchards when there was considerable bloom yet in sight.

Mr. PETTIT: The question was raised yesterday with regard to Dominion legislation with reference to the diseases of bees. We have legislation with reference to foul brood in Ontario and in Quebec and in British Columbia, but there are certain points with reference to shipping bees and honey from one Province to another, or shipping them into Canada from other countries that cannot be dealt with very well by the Provinces, and that really should be handled by the Dominion Government, and in that connection comes the question of disease along the border between the Provinces. The example that was mentioned was a case of European foul brood which was brought across from Quebec to the eastern counties of Ontario, by the bees flying back and forward across the line. We feel sometimes in order to protect ourselves in Ontario that some bees across the line should be inspected, and yet we have no legislation, and we have no power to do that. In that regard I think Dominion legislation would be helpful.

MR. LAING: I would like to say one thing with reference to this foul brood. I have had my share of American foul brood off and on during the past twenty years, and I know some of the difficulties of contending with that, and finally getting a crop of honey in order to make my bread and butter, and I think there are a great many would like to see the grant from the Government increased so that the inspectors can keep on the jog until this thing is cleaned up thoroughly. It is too bad to have cases of foul brood throughout the country, and the inspector perhaps not get around for a year, just for the sake of a few dollars. Most of us are taxpayers, along with the other people in the Dominion, and I think we should have enough money appropriated for that purpose.

A DELEGATE: Does the speaker say he has had foul brood for the last ten years?

Mr. LAING: No, sir. I said I had difficulty with the American foul brood off and on for the last twenty years. I do not get it from my own apiaries; I get it from some other parties, and I have cleaned it up for other parties and have got very little thanks for it.

Mr. MCEVOY: If Mr. Laing will name a committee I will second the motion that a committee be appointed to wait upon the Hon. Mr. Duff to see if the Government cannot increase this grant, so that the inspectors can go out early in the spring and stay on the job as long as necessary.

Mr. CHRYSLER: I rise to a point of order. I understand this was to be a discussion to help this committee to recommend a Dominion Government Foul Brood Act.

THE PRESIDENT: If there is no further discussion I will put the motion: "Moved by Mr. Byers and seconded by Mr. Laing, that these gentlemen be appointed a committee to consider the matter of a further resolution in regard to the Foul Brood Act."

MR. LAING: Would it be possible to include what Mr. McEvoy has suggested in the work of that committee? I think that is a matter that ought to be attended to.

MR. EVANS: It seems to me these are two different things. This Committee has to consider what they will ask the Dominion Government to do, that is, what particular legislation they want passed. The other is simply a matter of asking more money from the Province, and I think the Executive ought to attend to that.

MR. MCEVOY: I cannot just agree with Mr. Evans. Here are a hundred people who have a right to be heard, and not limit it down to the Executive. The Executive have been in office for years, and they have never yet tried to get that grant in shape that I know of. There ought to be a Committee appointed to speak to the Minister of Agriculture.

MR. EVANS: The other Committee has merely to report to this Convention what they propose to ask the Dominion Government to do, and then their duties are ended. The Executive is the proper body to attend to the Provincial Government matter.

THE PRESIDENT: This Committee which has been named is simply to bring the matter before the Association.

MR KIRBY: It seems to me this foul brood is increasing instead of decreasing notwithstanding all the inspectors in the country, and it seems to me we ought to make a clean dead set against it, and to get the Dominion Government to pass a law to destroy any diseased colony in the country. That is the only way to get the thing out of existence. I might state that over twenty years ago I had a diseased colony, and I dug a hole and buried it out of sight, and a few days afterwards I discovered another one. I wrote to Mr. Pringle, who was the President of the Association at that time, and he said that Mr. McEvoy would come to Oshawa and would go through all the bee-hives there. Where this came from I do not know, but I expected it came from a neighbor. I do not know for sure, but I had the idea that this disease was imported into Oshawa through diseased honey and the bees eating some of that honey. We cannot tell where this thing may come from at any time where honey is being sent around the country.

MR. GRAHAM: I do not see much use in destroying all diseased colonies when you let the careless bee-keeper go. I would destroy the careless bee-keeper first.

THE PRESIDENT: The Committee was appointed to bring in a resolution, and the discussion was to be for the purpose of assisting the Committee.

MR. EVANS: I would move that Mr. Byers be added to the Committee.

MR. CHRYSLER: I second that.

The President put the motion, including Mr. Byers' name, which was declared carried.

MR. SIBBALD: I think there is no doubt about the feeling of the meeting with respect to the increased grant, and as we do not know who the Executive may be next year, I think it would be wiser to name three of our members to interview the Minister to see if the grant cannot be increased. I would move that Mr. Nolan, Mr. Evans, and Mr. Armstrong be that committee. I am naming

Mr. Armstrong, because he has had experience with inspection work, and he will be able to tell the Minister what has been done in this regard.

MR McEVOY: I second that, on the understanding that the inspectors are to be started early in the spring and continue as long as necessary, and that the Inspectors are given a free hand wherever the disease is supposed to be.

MR. SIBBALD: I think Mr. McEvoy might leave that off, for if they get more money they will have more time to inspect.

MR. McEVOY: All right, but at the same time I would ask the Minister to see that there was no calling off, even if the grant should not be quite enough.

The President put the motion, which was declared carried.

METHODS OF ORGANIZING BEE-KEEPERS.

E. B. TYRRELL, SECRETARY NATIONAL BEE-KEEPERS' ASSOCIATION, DETROIT, MICH.

I have been wondering ever since I received a programme what I had done to the Ontario Bee-keepers' Association that you should ask me to come and tell you in the short time at my disposal this afternoon how to organize, when it is a question that has been discussed over and over by bee-keepers for a good many years, and in a measure is a problem yet unsolved. When we also remember that our large business associations and large fraternal societies are spending thousands of dollars each year trying to get a correct solution of this problem it certainly is a big task for me to tell you this afternoon how to accomplish this purpose. But if I can throw out a few hints that may help you I shall be amply repaid for coming here. I presume you all realize that this question of organization, this question of getting together, after all is really a part of our nature, and it ought not to be hard to organize—it ought not to be hard to get man and man together in an organization for mutual benefit. You see the young boy coming in from his play rushing in to the table and getting through his dinner as fast as possible that he may join his friends out of doors again. If you have noticed you have seen that the boys who get into depredations always go in gangs. You never hear of one boy getting into trouble; it is a gang of boys over on the other street who took Mr. So and So's gate and carried it away. Now, what does that teach us? It teaches us that this coming together, this working in unison, is something in our very makeup, that starts with the little boy and continues right on up to the old man. But I must say to you that the agricultural people, the farming class, to-day are the poorest organizers of any class on the face of the globe. We have been congratulating ourselves all these years that we are an independent class, and we speak of the farmer as an independent man. Why, bless your heart, he is a long way from being independent. He will take his load of potatoes or his load of grain that he has worked hard all the year to produce to the manufacturer, and drives to market and to the buyer he says, "How much will you give me for what I have got to sell," and then when he gets the money he says, "Well, now, I am independent; now I can do anything I have a mind to with the money I have got for my produce." He goes right over to the store to the man he buys from, and he says, "How much will you take?" That is rather unfair after all. Now, when I speak of the agricultural class I speak of everyone producing on the farm, whether he is raising grain, pigs, or honey, and we are all in a measure in the same way as to organization.

What is a successful organization, if you please? We have first to know what we want in order to get it. It is not enough for us to come together and talk and have a little social time. That will do for a while, and it does a great deal in interesting us in things, but it is not enough. First, gentlemen, we must have an object for coming together. When you ask me to join your Association I say, "Why should I join it? What is your organization for? What are you doing?" You have to have some reason to give me. You have to tell me why and give me reasons that appeal to me, so that I want to become a member of your organization. Then it is not enough to have an object. You must have a plan for obtaining that object. You can not say to a man you are going to do so and so for the members of the Association. You have got to tell him how you are going to do it. Maybe your plan is crude; maybe it is not in the right way, and it may not be carried out; but we have got to have a plan before we can make a success of the organization. Then, what else? We must have mutual effort. We must have every man so imbued with the spirit of co-operation and working together that they are all pulling for the same thing. Now, you can not get there if you don't, and don't you know that one or two people in an organization can make it an awfully hard up-hill business for the rest. Don't you know how disagreeable it is to be hooked up with a mule, the fellow that is kicking every time a thing doesn't go the way he wants it to go? Let us pull off our coats and get at the truth of matters, but let us leave our personalities out of it. Let us get right down to the question that we want to decide, and when that is settled let the whole fight be over with. We must pull together. Let us not be like the old man and woman that we have heard of. A travelling man coming along the road saw an old man on one side of the fence and an old lady on the other side, and they had a rope through the rail, and one was pulling one way and the other the other way just as hard as they could pull. The man stopped a few minutes and he says, "What are you doing?" The old man said, "We are trying to pull a rope through the fence." "Well, bless your heart, you don't expect to get it through that way? Now," he says, "you go over with the old lady and you pull on her end of the rope and see if you can't pull it through?" So he got over the fence and they gave it such a yank they almost fell over backwards, and it was no trouble at all. Then the old man says, "All my life the old lady and I have been pulling at the opposite ends of the rope, and I have just learned why we didn't get on with harmony and success." It is the same way with your organization. You have got to pull together and then you will get it. There is no power on earth will stop you. Then you want a single purpose. Some organizations want to do everything. They say we are going to do this, that and the other thing. Accomplish one thing first. Settle down on one single purpose, a thing you want to get, and then hew your work to that line. If you do that you will be able to make a success. Don't try to do too much.

Now, it may be surprising to some of you to know what is being accomplished in this line. In a little town up in the north part of Michigan the farmers had been selling their potatoes to the potato buyers in that locality for years and they were getting what they considered the worst end of the deal. In the little towns north and south of them the price paid for potatoes would average ten cents a bushel more than they had been getting at the town of Manton. The farmers around were pretty well organized in a fraternal society, and five of those lodges got together at a picnic, and after the picnic was over they sent

delegates up to a meeting, and there they laid the foundation of a farmers' co-operative society composed of the representatives of the different associations surrounding them. Those delegates formed a stock company with a small amount of money and purchased a potato warehouse. They had their ups and downs; they had the fellow in the ranks who said, "You can't succeed." They had the fellow that expected too much, and kicked because he didn't get the world; and they had the outside fellow to fight, and the organized dealer to fight in addition. Then they were inexperienced and did not know how to do these things. Bless your heart, the farmer hasn't been in business. He has been keeping his nose too close to the grindstone of production that he hasn't been noticing the selling end of the deal, and the result is the other fellow has been organizing, and he is strictly up against it when he undertakes to do something for himself. But I want to say, that two years after they were organized I happened to be through the same territory at a little town called Ainsley where they had been paid ten cents a bushel more for potatoes than they had been before. I went down to Manton and found where they were paying forty cents the buyers were paying sixty cents. I went over to the little farmers' organization, and I found them realizing seventy cents out of the potatoes, which really was an increase of thirty cents a bushel which the farmers were receiving because they were organized. Down in the State of Illinois there is a place where the farmers got together and did the same thing, and I could name a number of instances of that kind. The farmers in the State of Michigan fought the International Harvester Company, one of the biggest concerns in the country, to a finish, on a binder twine question, and succeeded in getting a binder twine plant established at the Jackson Prison, so that to-day the farmers of the State of Michigan buy their twine at the lowest cost of manufacture. Now, the farmers secured it by being organized. I mention these merely as reasons why we ought as a producing class to become organized. As Secretary of the National Association I cannot resist the temptation to tell you about the new National, and about what we are trying to do and what we believe can be done in the way of the organization of bee-keepers. The old National, you understand, was composed merely of individuals scattered here and there throughout the United States and Canada. Your Association, as an Ontario Association, had absolutely no representation in the National any more than any other society anywhere else. You went there not as a representative, but as a member of the National. The conventions were nothing more or less than large local conventions, because if the meeting was in Toronto it would be the Ontario bee-keepers in attendance, and if it were held over in Minneapolis it would be the Minnesota bee-keepers in attendance. We had a machine that was continually changing. The National Association has now before its members a new constitution which will be voted on during the month of November, and if that is passed, the local Associations will send delegates. We want good live local State or Provincial Associations, but local Associations as a rule are handicapped, for there is a lot of work to be done and a man cannot afford to do much of this work for nothing. Now, if it isn't worth paying for, it isn't worth being done. We want something to help the local Associations, no matter where they may be; and, secondly, we want a National, or International if you please, collection and distribution of crop reports. Then we want to institute a selling campaign. We want a plan by which we can take care of the little bee-keeper that is coming along, that is producing a few hundred pounds and who does not know where to sell it. The old bee-keeper in the neighborhood has a market, and the little fellow comes

up and he has no market, and then you don't want to tell him where you sell your honey, especially if that market is one you really want to hang on to for yourself and it isn't big enough for him also. You Ontario people are entitled to a great deal of credit for having a Honey Committee, your Price Committee as you call it, which tells your little bee-keeper what he ought to get. It is a move in the right direction, and I congratulate you. Then we want to disseminate knowledge. We were all little fellows once, but the little fellow becomes the big fellow, and the more you increase the industry the more bee-keepers you can have, the more honey will be produced, and the bigger you can make your market the better market you are going to get, and the more stable the proposition. A few years ago the only market for honey was in the drug stores, but you can now go and find it in every grocery store in the city of Toronto, and they think they have got to have it, and if they don't know where they can get it they will scurry around until they do get it. The more honey you have to sell the better your market becomes. Then we want more legislation, and how are you going to get it? With a National headquarters, and with the National finding out the best laws, they are in a position to help your body of legislators to make the proper law to get certain results before they experiment with half a dozen laws. The National Association ought to be able to help you along that line.

Let me tell you our plan by which we hope to do this. First, we want to organize branches. If the new constitution goes through it provides for one central Association with its various branches scattered throughout the United States and Canada. Now, I know you have turned us down in Reciprocity. (Laughter.) There has been no better object lesson on the question of organization than how the farmers of Canada voted that question down. If the question had been brought before the farmers of the United States you never would have had a chance to turn it down for they would have turned it down.

Then these little branches won't be in affiliation with the National, but they will be part of the National and they will send delegates to the convention of the National. The branches would elect their officers and have their own association. Then there would be some sort of National headquarters and through that we would carry on the work. Now, a large committee is too unwieldy. If you want anything done appoint one to do it, and the responsibility is on one man's shoulders and he will do the work. Then we want the crop statistics. In Ontario you get the reports of the different honey crops all over the Province. Let us carry that to the State of Michigan and the other States. All these reports come in to the local secretary, and in that way we have the statistics of the crop of all the beekeepers all over the country. Then our Committee on Prices would get together and figure it out and could arrive at the price that should be paid. We need definite figures. The National headquarters could send out letters to the State or Provincial Secretaries, and they in turn send their representatives out, and those individuals will fill out their reports and return them to your Secretary and he sends it to the National headquarters, wherever that may be. That is done early in the season, and then the officials in the National tabulate all that information and that report goes to every individual member of the Association, and that gives you the information that the buyers have. This information gives you the condition of the honey crop, and not only that, but you have to take into consideration market considerations, and that is given to your members. Now, would that not be worth anything to you? I think it would. In the State of Michigan last year

the buyers scoured the State before we could get that report out, and the result was the buyers of honey in the State of Michigan bought two or three cents a pound less than they had any business to do because the individual bee-keeper had not been informed of the conditions.

Then the question of standardization comes up. One man has one size of frame and another has another. You cannot buy supplies in quantities, and as a result you have to pay more money. We cannot all be right, and these things have to be brought together and standardized so that we have a standard package and a standard thing to do business with.

Then comes the question of looking up the markets. I wonder how many bee-keepers realize where the market for our honey is, and where it goes to. I had a little honey to dispose of a short time ago since I came to the city of Detroit, and I wrote to a large manufacturing concern that I thought possibly used honey, but I was not sure. They asked me to submit prices to them. Now, there is a thing to consider. When a man comes and asks you about your honey crop, don't you ever ask him what he will give you for it. Tell him what you will take, and if it is too high you can come down, but if it is too low you will never get up again. I quoted this man a pretty good price, because I had a first-class quality of honey. I gave him really the top of the market, or a little higher, and the reply was an order for all the honey I had. I found out afterwards that that concern was using tons of honey every year, and they were using a cheap grade and paying for that grade as much as I charged them for first-class honey. The first-class honey was not worth one cent a hundred pounds more than the cheap honey for their purpose. These things simply go to show that we have not touched our market, and these are questions that can be taken up by the National Association through a Central Office.

Then the question of legislation can be done in this way. In the State of Michigan we wanted a foul brood law, and I secured a list of four thousand names of Michigan bee-keepers, and I got out a four-page circular with two illustrations showing a healthy brood and a badly diseased brood, and something about the danger of the disease, and what ought to be done with reference to getting in touch with the Department of Agriculture at Washington. Then I urged them to write to their representative. Some of them did not know who to write to, and this circular gave the name of the representative, and in that way we got some machinery put in action. If a bee-keeper has only one or two colonies, he can write a letter, and in that way the Association can bring some pressure to bear in order to get legislation that you cannot get very well otherwise.

Then we want to do some advertising in a general way, but that advertising question is another question all by itself. We are not ready for a general advertising campaign yet, but some things can be done. Then we can work out selling plans, and the National Association can inaugurate a system. Mr. Smith in this locality, and Mr. Jones in that locality, and someone else in another locality may be all trying the same plan in the same way, and maybe it is a failure. Somebody else's plan may be a success, and that plan could be made known to the other fellow and in that way save a lot of experimenting and failure.

Now, that brings us down to the question of what ought this Association to do. What can it do? In the first place I would be very glad to see this Ontario Association adopt the constitution of the National Bee-keepers' Association. Of course you will have to read it over and know what it is. That, you understand,

would not interfere with your body as a local organization, and it would not interfere with your laws. You can become incorporated if you wish, but you will find it a benefit to be a branch of the National, with representaton at the National meeting, and you would get all the benefits that I have outlined. Then you want to begin forming local branches. Mr. Pettit says we have been doing that, we have county Associations all over, but are they connected with your Ontario Association? If I belong to a county Association, do I come here as a representative of that branch or as an individual member of your Ontario Association? You want your local branches to be part of your Ontario Association. You want them to send a delegate and then you have a machine to do business and you will get some results. Then you want to take up this co-operation, but do not try to do too many things at once.

I was sorry I was not here last night to hear the address of the gentleman that spoke on co-operation, for he certainly ought to have been able to give you some excellent points. I just want to say, that 99 per cent. of the co-operation plans I have seen started have failed simply because they were not properly organized, and did not have a proper plan to work on, and I will tell you two rocks they come to grief on as a general thing. One is that a few men get control of all the stock and run the business, and make it a regular private business the same as any other concern; and another is that they undertake to go and slash prices to a point where they put themselves out of business, because they do not have enough capital to do business on. There is a plan in force in England to-day which will be adopted in this country sooner or later. If you are going to handle supplies, which is something I would not advocate very strongly until you are thoroughly inbued with the idea, sell those supplies at the actual selling price or the regular retail price of those supplies. Do not undertake to cut prices, and sell those supplies to everybody at the same price that you do to members. Supposing we are organizing a stock company, and all of us take stock, or let us say half. This half takes stock in this Association, and we purchase our supplies and establish headquarters in Toronto. This half comes down to buy their supplies, and they pay the regular price, and along comes this half and they pay the same price—absolutely no difference. Now, we are a business institution and we are out after business. When we have got through the year's work we will first deduct the running expenses of the business, and then we will pay these fellows that have got stock not over six per cent. or seven per cent. on their investment, simply what their money is worth. Why? Simply because there is no object in one man getting all the stock because it does not earn any more money. Now, we will distribute those profits to the stock holders who own the stock according to the number of dollars of business he does with the institution. For instance if I own stock and do not do any business, when I get my six per cent. I am done. If your President on the other hand does $1,000 worth of business he will get his six per cent. and a dividend on his thousand dollars worth of business besides. It puts a premium on the amount of business you do with the Association. But you say where do these other fellows come in? Why, they are not co-operators. If they were not willing to go with you and help you push the wheel of co-operation they are not entitled to any more consideration than they get at the present time. What you want to do is to let each one have a little stock, and in that way you have a truly co-operative institution. That plan may meet with objections at first, but the more you discuss it the more it will appeal to you.

Then we want to make our local Association just as alive, just as close together as we can. Don't you know we live too far apart; don't you know we don't know our next door neighbor to the extent we ought to; don't you know some little difference will come up between you and your neighbor, and if you just walk over and take that neighbor by the hand and say, "What is all this about?" we will find we are scrapping over nothing, and we will find that that man whom we thought was the worst man in the neighborhood has after all his good points, and these good points are capable of cultivation. Rub shoulder to shoulder and rub off those rough edges, and we will get more out of life, and we will make our Association a power that will be for your benefit and for my benefit, and the benefit of us all.

EDUCATIONAL METHODS IN AGRICULTURE.

C. C. James, Deputy Minister of Agriculture.

It is quite a few years since I had the pleasure of addressing the Ontario Bee-keepers' Association, and my knowledge of you and your work has been got somewhat second hand, but of recent years you have been a little more closely in touch with our department, and through your Secretary, Mr. Hodgetts, I have been able to keep in touch with your work. I was wondering as I came along the street to-day whether the place of your gathering was the same old Association or not. Well, I hadn't been very long listening to your discussions when I came to the conclusion that it was the same old institution with a little more life in it, because the first thing I knew, no matter what the proposition, we got around to our old friend foul brood. Now, someone expressed the hope this afternoon that this would be stamped out. Will you tell me what you would do if you had it stamped out. What interest would there be left in your Association? (Laughter.) I suppose, like the fruit growers, after you had mastered one pest and felt you had the better of it, some other one would come along fully as bad and you would have to start all over again. If I had any doubt about it being the old Association apart from that, it was removed when the question of increased grant came up? Are you never going to be satisfied? Well, not until you are dead or until you become a moribund Association. That is one of the surest signs of life and activity—wanting more. Then the third point, get them to spend that and then have the Minister say, "Go on," and say "Spend more!" Why, that is what Mr. McEvoy used to be always saying. He was never satisfied with spending the grant, he always had to have a little more than the grant, and he is still at it, and advising you younger men to follow in his footsteps, and I suppose it will be up to us in the Department to see that you do not spend more than the grant.

Mr. Tyrrell was talking about the producer being caught at both ends, when he goes to sell his goods, and then when he goes to buy, and I suppose you think as producers you are in the hardest and toughest place of anybody. How would you like to be in the position of being held up at every point and having nothing to say about it? I am talking from the consumers' standpoint, and I can speak feelingly, and there are a whole lot more in the city of Toronto who are getting to feel it, and there are some of us who know we are going to feel it still more before next summer with potatoes going up, and with butter going up, and with

milk going up, and with canned goods going up, and judging from what we hear from the North-west we will have bread going up before spring too. Don't think you producers out in the country are monopolizing the troubles and cares of life. There are others who share them with you, and I am quite satisfied that we who are consumers can add point to what Mr. Tyrrell was saying, that here is the great mass of consumers on one side and the great mass of producers on the other, and we consumers are not paying the prices into the pockets of the producers. There is one of the greatest problems facing the people of this country to-day, just in that very question, and I want to get you people who are in the producing class to grasp the significance and force of it. We are beginning to feel it. We are beginning to feel it, I think, more than you are, because you can control the producing end while it is almost impossible for us to control the consuming end. How are we going to get the great consuming class in immediate contact with the producing class? I am meeting that problem on every hand. Fortunately knowing a lot of producers out in the country, men who produce potatoes and butter, and men who grow supplies and so on, I am in a position to go out and deal directly and buy a little of my stuff at first hand, but the great mass of the people in the city of Toronto have not got that opportunity and they are beginning to feel it. Now, there is that great question, and you as an Association and as individuals and members of local Associations as producers should give careful consideration to it, and there is enough in that alone to warrant the suggestion which Mr. Tyrrell has made, the combining of the producer into co-operative Associations, not for the sake of holding up the public, but simply of seeing to it that the producer gets a fair deal in the general affairs of life. (Applause.) We are not thinking of this in this country alone, or in the United States. There are other countries across the water where the matter is still more important and of more consequence than even in this country—countries where the line is more losely drawn between the amount that a man earns and the amount he spends. Perhaps we are a little prodigal in this country, and we do not appreciate the importance of the question, but the older you get the more important it will become.

The question I have been asked to talk to you about this afternoon as printed on the programme is "Educational Methods in Agriculture." Could you have any better illustration than the talk you have just had of the necessity of education in connection with our great producing classes? I do not mean simply going to school and learning to read the English language, or being able to take a pen and write sentences, or make up accounts, but the training of people so that they can either stand on their feet and think or sit in their seats and think these questions out along intelligent lines. Until we get our great producing community, the fruit growers and the dairy men and the bee-keepers and the vegetable growers taking a broader consideration of these questions we will never have the best success in our association or in our co-operation methods. These classes need education just as every other class in the community is needing education, and there is more likelihood of the classes in the towns and cities receiving education that particularly benefits them than there is of the people in the country. That, of course, is a natural outcome of the different conditions. Where you have people closely congregated together and where they can meet without any great inconvenience every day it is easier to edueate than it is in the country where people are scattered and living at remote distances. Now, this question of education and educational methods has been before us for a great many years. I

remember when a little over twenty years ago I came into the Department of Agriculture here. We were just beginning to try to educate the producing community by sending out a few people to talk to them on the public platform. It was in the early days of the Farmers' Institute, and gradually as these developed we had some special meetings, and there would be a Dairy Institute or Farmers' Institute or Fruit Growers' Institute or Bee-keepers' Institute, and we sent out people whom we thought were specially qualified to talk to the farmers along educational lines. That was all very well in its way. That was followed up a little later by the printing of some of these addresses in pamphlet form, and printed reports of meetings, and so on, and distributing them, so that in addition to the education that was given from the public platform, there was an opportunity given to carry this material home and read it at convenience. Well, that reached perhaps a few more, but you see in that way you could only reach those who came out to the meetings, and through the printed material you could reach only those who were willing or anxious to read, and in either case you had some doubts as to whether you were convincing the people to whom you were talking, and you had some doubt as to how far the man who was reading was believing what he read. There was that limitation, then, on the instructions. There was the further limitation in this regard, that the great majority of people who came out to hear, and the great majority who read, were grown-ups. They were largely made up of people like yourselves, men of mature years; some who had passed the average of life. Now, supposing the future of bee-keeping depended simply and solely upon you men who are present to-day, how many years would it be before you were practically all out of business and a new generation taking your places? Come back to this meeting ten, fifteen, or twenty years from now and how many have you left of the active bee-keepers at that time? The point I want to make is this: by limiting out work to addresses to these audiences and limiting it to the printed material which goes out and falls into the hands of the mature man, we are to a large extent overlooking the great, growing, coming-on class of the community, and we have got to keep on doing out work over and over and over again. So that while it was very limited in its scope it was also limited to the class to which the appeal was made. Now, all over this continent, particularly through the northern States, there has been a growing tendency to enquire into the methods of agricultural work. How can we help the farmer to make a better farmer of himself and to make a better citizen of himself? The same thing is being enquired into in all the progressive countries of Europe. How can we best solve this question? Some people are inclined to turn it down with this remark, well, what is the use. Why should we be particularly concerned about the farmer and want to have agriculture particularly developed? Why do for him what we are not attempting in regard to the other classes? Why not leave the farmer largely to himself as we leave the manufacturer and the people of the towns and cities along various lines and callings largely to themselves. Why not leave it entirely to the farmer? If it were simply a case of the individual farmer, and if it were a case of helping this farmer on that farm so that he would make a little more money and so that he would be a little better citizen and have a little better time, I doubt if we would be justified in trying to devise systems or processes that would help him, provided the influences were restricted to the four walls of his house or the four boundaries of his farm. The great reason, the important reason why it should be our duty, and your duty, and the duty of all the

people in our towns and cities to try to improve by educational methods the people living upon the farms is that the farmer is an integral part of the whole community as no other person is. His life is linked up with the prosperity, the success, the citizenship of the whole country to a far greater extent than any other. He can live to himself less than any other man. The millionaire can go and put his money in the bank, and he can spend a considerable portion of his income and his time in other countries, and he can spend the great bulk of it himself, without particularly influencing the rest of the community; but it is absolutely impossible for the farmer in the growth and development of his work, and in the increasing of his prosperity, to restrict that, as I stated a few moments ago, to the four walls of his own house. There is no man whose progress influences the entire community so quickly; there is no man whose productions have so direct an effect upon all the other productions of the country; there is no man who fits in so closely with the general machinery, or constitutes the general prosperity of the country. So that apart entirely from the personal or individual standpoint it is a matter of national importance to see to it that the rural community—those who are producing the prime necessities of life—shall have a fair show, and shall be encouraged to do the best they can, and shall be assisted along that line with the very best methods that are available. So that it is up to the men who occupy public positions, it is up to the people who have an interest in the general welfare, to see to it that methods are put into operation which are most likely to help in developing our agricultural resources. Now, we made a step up from talking to people and giving them something to read when, a few years ago, we made up our minds that the one way and the only way was to get hold of the great mass of the community living upon the farms of this country was by stepping down off the platform—by not being satisfied with printing material, but by getting out and showing the farmers the better way of doing things. You know there used to be a prevailing opinion that there was a good deal of prejudice among the farmers, that they did not like to be shown things, and so on, and that they were quite well satisfied with their own methods. Now, if you go the right way about it, I venture this remark that there is no community in the country so responsive to proper methods; and with the methods that we have been putting in force for the last four or five years in the various counties of this Province we think to a large extent we have solved that way. Instead of sending a man to get up on the platform with his good Sunday clothes on and his manuscript in his hand to tell the farmer how he ought to do things, and at the same time having the farmers down in the audience questioning whether that man was speaking mere theories or talking out of his own experience, and wondering whether that chap would put into practice those things he is talking about—instead of doing that we say to the man we select, "Here is a colllection of farmers, and they know a great deal more along some lines than you do; you, however, know something which they do not. They working alone get to a certain point, and you working alone get to a certain point, but by co-operation the two of you together can probably do a great deal better and make a greater success of the work." The man goes in and he takes off his coat, and he begins at once to get the sympathy of that farmer. Now, the key to the whole situation is this, not that things are talked to him, not that things are written to him, not that things are done for him, but by sending in a man of the right training and the right temperament to the farmer, whether he is raising chickens, whether he is producing fruit, whether he is raising crops, or feeding stock, or keeping bees, whatever it may be, this man going in begins gradually to

stimulate that farmer and show him the better way, and at the end of the year the farmer sees he has accomplished more than he did before—and he did it himself. Now, just one illustration. Up in the town of Collingwood we had a man located last year, and when I was up there to a meeting he said, "There are a whole lot of run-down orchards in the township of Nottawasaga; I think we will see if we can't do something for them. The orchards are neglected and nothing is coming in the way of returns, but," said he, "there are possibilities there." "Well," I said, "don't undertake too much." However, he moved around among the farmers and he got six of the farmers located in different parts of that township to say that they would take instructions, or they would co-operate with him in the handling of those orchards. They started in and they began to clean up the orchards, and to improve them and clean them out, and the next thing they did was to put up a big signboard along the main road: "Ontario Department of Agriculture Demonstration: Watch the Results." "Well," I said, "you have got to make good now; you have got your sign up and they will be watching for results sure enough." They began by spraying, and the fruit came on, and what happened. Well, those of you who were at the fruit exhibition saw the exhibits from those orchards down in the north-east corner of the St. Lawrence Market, and when the prizes came to be awarded what happened? Why, out of those old run-down orchards that had been producing little or nothing they got the first prize box of Northern Spies, and second prizes and third prizes, and they sold the whole lot. The farmers at the beginning of the year did not know whether they were going to get $5 or $50 for their fruit; whatever came they put it in their pockets, and said it was a dispensation of Providence. What happened this year? Why, I am told that every man up and down that township is spraying. Now, what is the secret of that? We have had men talking from the platform years and years and years ago telling these people they ought to go out and care for their orchards, and we had sent them bulletins and reports, I was going to say by the ton. I remember one bulletin I made out myself, and I thought it was quite a hit: "Does it Pay to Spray?" But that did not move them. I will tell you what did move them. A man went in and took his coat off in the orchard and said, "Now, come along; you and I will prune these trees and we will spray them and see if we can't get results." And they got results, and our man handed them a cheque at the end of the year to put in the bank. The farmer was educated; he was touched; you got him as you could not get him in any other way. We did the same thing down in some orchards in the county of Dundas, and perhaps you saw last year the exhibits in the fruit show here, some boxes of MacIntosh Reds. Another of those practical chaps got hold of the owner of an old orchard, and I think there were only thirty-three trees, a little under an acre. He said to the man, "Now, you have got these old MacIntosh trees, can't we take care of them and fix them up?" The man finally consented, and they went to work together and they did it, and then Mr. McNeil, the chief of the fruit branch of the Dominion Department, when looking for some fruit to send over for the festival of Empire, that has been on all summer in London, saw this orchard, and he said, "I will give you $400 for the apples on the trees," and he got it.

We are applying the same thing to grain growing and drainage, and the same thing to alfalfa. You can talk to people about alfalfa and they will listen to you and say, "I guess it is all right," and you can send them bulletins describing alfalfa, and that is all. But when you go up alongside of a man and say, "Can't

we get together and sow this field with alfalfa and make an experiment of it," you get the man on the tender side of his nature, and once you get hold of him in that way you can do almost anything with him after that. That is the principle we have been trying to work out in connection with our educational methods. They are beginning to apply it in various lines and methods in different parts of the United States. They have worked it out in France and Belgium, and Ireland, wherever they have been able to get hold of the farmer who has careless idcas and train him into an active, successful, energetic man. It has been done in that way, not by talking to him, not by sending written material to him, but by going out and getting in personal contact with him. In 1907 we established seven of those centres, and now we have got twenty-two of them, and every man has an assistant. The work is growing. When you begin to see the possibilities in the way of fruit production, in the way of grain production, in the way of live stock, and how little we are doing in conneciton with it simply because we are not using the best material one wonders why we are so slow to learn. You men know what the possibilities are in connection with honey. The previous speaker, I think, made some mention about the limitation of the honey product and its sale here a few years ago. Why, those Provinces where honey cannot ordinarily be produced can take five, ten, or I suppose twenty-five times as much as we are producing at the present time. I doubt if there is any industry in the whole round of agriculture which is capable of such enormous expansion as the production of honey, and when you have supplied all the tables that would take it—and there is no limit to that, because the people of this country are not educated up to the use of it. Take the number of families in the Province of Ontario and give a small quantity of honey to each family, and then put alongside of that the limited production, and you will see what a wonderful market there can be developed. It is not simply a case of developing the industry from the production end, but there are wonderful possibilities of development from the market or the consuming end. You will find, I think, when the time comes that you begin to wonder where your market is coming from, that there will be plenty of assistance from the Government and Departments of various kinds to carry on a great educational campaign along that line, because you will be adding not only a very valuable part to our great national resources, but you will be doing one of the finest things possible for the people of this country if you can only get them to use honey in larger quantities. When you look all around and see the wonderful possibilities of development; when you see the great variety of climate in this country due to the Great Lakes, and the variations in latitude and the great variety of soils, due to geological conditions, and if you look at the map and see the indentations caused by the lakes, you will at once be struck by this thought that there are variations in this old Province of Ontario that probably are unequalled in any other part of the North American Continent, and hence these agricultural problems are exceedingly interesting on account of the variety. You certainly will agree with me that we have got the people here. You know what you are capable of doing if you only get the right encouragement. We have the soil and the climate and the people, and why should we not go on and double and quadruple and increase indefinitely the agricultural productions along these various lines to which I have referred. It is not a question simply for the Department of Agriculture, or the Minister of Agricultural, or any official, or not for any Association but it comes down after all to a question of personal and individual responsibility. The

State is made up of individuals. The Bee-keepers' Association is made up of its members, and you will produce not what the Association produces, but simply the sum of your individual efforts, and there is only one man responsible for your individual efforts, and that is yourself. When we begin to appreciate, Mr. President, not only our possibilities but our responsibilities then it will be that the old agricultural Provnce of Ontario will begin to shake herself and come up and show her might, and there will be displayed not only to Canada but to the people of the entire continent that we have not only great possibilities, but we are taking advantage of them. Mr. Tyrrell will, perhaps, excuse us if he sees over here some little inclination to, I won't say boast about ourselves, but we feel we have got the material, we have got the goods, so to speak, right here in this Province, and, no matter what others may do, we have faith in the old Province of Ontario. I hope that this Association, through its individual members may be able to contribute its share to this great agricultural progress and that you will reap your just reward.

REPORT OF COMMITTEE ON RESOLUTIONS.

Your Committee have had before them a resolution from the Middlesex Bee-Keepers' Association *re* nominations and elections, and would recommend that it be laid over for the present:

"Resolved, That the Middlesex Bee-keepers' Association recommend to the Ontario Beekeepers' Association that the constitution of the Provincial institution be so changed as to make it a federation of all the local societies now in affiliation with it, and such societies as may be organized, each local organization to send one delegate, with the understanding that the same delegate should be one nominee for the board of directors for that district."

Your Committee have had a communication from the Brant Bee-keepers' Association *re* amendment of Foul Brood Act. We recommend its consideration by this Association:

"That in view of the seriousness of the 'foul brood' situation in the Province of Ontario, this annual meeting of the Brant County Bee-keepers' Association is unanimously of the opinion that the present Foul Brood Act should be so amended as to render illegal the removal of colonies of bees from one place to another without the written permission of the District Foul Brood Inspector. Also, that all colonies of bees brought into the Province should be inspected by a Foul Brood Inspector as soon after their arrival as possible."

A communication from the Huron Bee-keepers' Association is referred to Secretary Hodgetts, who will give the required information.

MR. HOLMES: I beg to move the adoption of the report. (Carried.)

THE PRESIDENT: It has been suggested that the resolution of the Middlesex County Association should be laid over.

MISS ROBSON: I am quite willing, as far as I am personally concerned, that the resolution should be laid over for the present, but I do not think the Committee grasps its full significance. It was more far reaching than the report would seem to imply. It, in fact, suggested the carrying out here in Ontario of what Mr. Tyrrell was outlining as the programme of the National. The idea was

to change the constitution of the Ontario Bee-keepers' Association to make it not a large local society but rather a federation of the local societies. That was the idea discussed in London.

Mr. Evans: I cannot possibly see any advantage in the resolution. There is no objection to any Association nominating a director at the present time. They can send in their nominations for whoever they wish. Then, I think, it would be impracticable to get the districts to meet to elect their delegate. We have several counties in one district, and none of those counties could elect their delegate who is to be the director. You would have to get the districts from half a dozen counties to meet somewhere and elect the director. That would be cumbersome and difficult, and I doubt very much whether the people would turn out for that purpose. I would suggest, if each district wants to elect its own delegate, it could be arranged here at a time set apart. Let each district meet in a different place and each elect a director. I think there is far too much importance attached in this convention to the matter of electing directors. Outside the Executive the directors have very little to do. and it doesn't matter very much who the directors are, and there is no particular advantage to any district in having a director on the board that I can see. If there is any advantage in the change all right, but if it is only an imaginary advantage I think it would be a mistake. I am not particular how the directors are elected, but I would rather that the Convention of Bee-keepers of this Province would meet together here, and when they come here they have full control of the officers and the management of this Association, and I would rather have that than have them come and feel that the election of directors was all over and they had nothing to do with it, and all they had to do was to listen to what the authorities chose to give them. I would prefer that every bee-keeper in this Province should come here and feel that he was the equal of every other one, and that the work was not done before he came.

Miss Robson: I think it was fully understood when that resolution was drawn up that for the present it would be laid over, but I think the Middlesex bee-keepers were looking forward to the time when this Association will be doing more business than it is at present. We are talking co-operation constantly, and eventually we are going to do more, and when that comes we will need to have a different organization. This matter was brought up tentatively to set the bee-keepers thinking along those lines. Of course if each county sent delegates that would mean too many directors, and there would have to be a choice among them.

Mr. Couse: Even after they appointed a nominee, individuals from the same community could be nominated and elected, so that we thought it was practically unworkable.

Mr. Pettit extended an invitation to the Association to meet at the Agricultural College, Guelph, in January, instead of in Toronto. Upon motion it was decided not to accept the invitation, but to hold the annual meeting in Toronto.

REPORT OF THE EXECUTIVE OF THE BEE-KEEPERS' ASSOCIATION, 1911.

The membership of the Association for 1911 is 470; 350 came in from affiliated associations and the balance of 120 in single subscriptions. The membership this year is 470, as compared with 319 last year, several new associations having

affiliated with the Ontario Association the past year. The new Associations are: Huron, Wellington, Hastings, Leeds, Northumberland, Lincoln, and Welland.

The affiliated associations with their numbers are as follows:

County.	Members.	County.	Members.
Huron	24	Halton	22
Wellington	22	York	26
Hastings	24	Simcoe	16
Leeds	20	Brant	21
Northumberland	20	Middlesex	23
Russell	13	Glengarry	10
Lincoln and Welland	26	Norfolk	26
Oxford	12	Victoria	28
Haldimand	15		

The foul brood inspection was again carried on during the year through the Department. The districts were reorganized and sixteen inspectors in all appointed for the Province. The grant for this purpose this year was $3,000.

A circular was issued to all bee-keepers and the crop report was again compiled on the information gathered from replies and a copy sent to all members. This was again done in regard to the crop report on buckwheat honey.

A Bulletin entitled "Bee Diseases in Ontario" was prepared by Morley Pettit, Provincial apiarist, containing valuable information in regard to this subject compiled from replies received in response to a circular issued in May of this year. The bulletin contains information as to the counties and townships of the Province in which American foul brood is found as taken from the reports of the inspectors of apiaries of recent years. It also shows counties and townships where European foul brood is to be found and information to bee-keepers as to examination of the apiary for disease, how to detect symptoms of disease, its method of treatment and cure. The bulletin also contains copy of "Act for the Suppression of Foul Brood among Bees."

REPORT OF THE HONEY CROP COMMITTEE.

The Committee met in Toronto July 17th, two weeks earlier than usual, on account of the much earlier season.

A greater number than ever before reported, showing a growing interest on the part of the bee-keepers. After going over the reports carefully, taking into consideration the season and its effects upon the fruit crop and other matters that affect prices, such as the prospects of a good Western demand, it was decided that higher prices than last year might be recommended, and the following circular letter was mailed to members:

Toronto, July 18th, 1911.

DEAR SIR,—

The Honey Exchange Committee of the Ontario Bee Keepers' Association met at the Secretary's Office yesterday, July 17th. This date is two weeks ahead of the meeting of past five years or more, as the extreme drought shortened up the white honey harvest to a very considerable extent. Reports received from all counties of the Province show a decided falling off in the crop, with the exception of Middlesex and a few apiaries in other central western counties.

The average yield per colony is 50.6, as against 58.3 in 1910, which would mean a reduction of at least one million pounds in the total crop. Entire failures of the crop are commonly reported this season, and the average is lower than for many years past.

Taking into consideration the practical failure of the small fruit crops, the high prices of cherries, only a fair crop of apples, and the reduction in the supply of white honey, both in Canada and the United States, the Committee would recommend the following prices for the year:—

No. 1 Light extracted (wholesale)	11c.—12c. per lb.
No. 1 Light extracted (retail)	13c.—15c. per lb.
No. 1 Comb (wholesale)	$2.00—$2.60 per doz.
No. 2 Comb (wholesale)	$1.50—$2.00 per doz.

A later report will be sent out to cover Buckwheat Honey.

Yours very truly,

WM. COUSE, Streetsville.
W. J. CRAIG, Brantford.
H. G. SIBBALD, Claude.
P. W. HODGETTS, Toronto.

"Your Committee met again in September to consider the dark honey situation, and again were gratified to receive more reports than usual."

The second circular letter was mailed to members who had in the first report reported that a crop of dark honey was expected. The following is the dark honey price advice:

HONEY CROP REPORT, SEPTEMBER 7TH, 1911.

The Honey Crop Committee met yesterday (September 6th) to look over the crop reports and recommend prices for dark honey. A good many reports were sent in, and from these the Committee agree that the crop is about the same as 1910. Owing to the shortage in early fruit, there has been less home canning than usual, which will undoubtedly result in an increased demand for our honey.

The following prices are recommended for dark honey:—

In lots of one ton and over, to wholesale grocers or commission houses	6¼c.—7c.
In smaller quantities, to the retail trade	7¼c.—8c.
Retail, direct to consumer	9c.—10c.

In answer to our enquiry *re* prices realized for light honey, 100% report that the recommended prices have been obtained. A very large local trade is reported from many points. This should be encouraged as much as possible. The demand for honey will undoubtedly result in an increase in the trade of darker grades.

A well-known Toronto firm recently issued a scare card, in reference to U.S. honey situation, in an endeavour to beat down Ontario prices. N. E. France, Manager National Beekeepers' Association, in writing to a member of the Committee, states that the U.S. crop is the shortest in twenty years, and will fall far short of supplying home demand. Members are cautioned not to take any notice of reports issued by dealers, with the idea of bearing down prices.

WM. COUSE.
H. G. SIBBALD.
MORLEY PETTIT.
P. W. HODGETTS.

An enquiry was also made in the 2nd card sent out as to the prices already realized for white honey, and from the replies received it was evident that the prices had been realized.

It was moved by MR. SIBBALD, seconded by MR. BYERS, that the report be adopted. Carried.

REPORT OF COMMITTEE ON CO-OPERATION.

THE PRESIDENT called for the report of the Committee or Co-operation.

MR. CHRYSLER: As there seems to be some lack of interest I did not intend to press the matter. We have done a lot of thinking and have met a couple of times, but after our meeting at Brantford early in the season we had some advice from our headquarters to go a little slowly in the matter. There was a misunderstanding probably among some of the bee-keepers that we were to go ahead and organize a co-operative association, but we were only to bring in a report. Consequently we did not do anything as regards organizing, although we had made out some plans and spent some time in framing a circular letter to send out among the bee-keepers.

During the past year we have held two meetings to consider this matter of co-operation among bee-keepers, and after giving the matter much thought we believe that the co-operative buying and selling of honey and supplies is practical and advisable, providing we can get a subscribed capital of $10,000, divided into shares of $10 each, no person to be allowed to take over 50 shares.

We suggest the following:

1. That this Association elect a sufficient number of provisional directors to organize.

2. That the directors be authorized to select a business manager and proceed at once to get things in shape for the transaction of business.

3. That we establish at some central and convenient place a warehouse for the storing, bottling, grading, and thorough preparation of our honey for the markets, as we believe that in the past much injury has been done to the markets and the price held down by this lack of care in preparing our product for the retailer.

4. That we also engage in the handling of bee-keepers' supplies, and if the manager and directors think advisable other produce to a sufficient extent to enable us to keep our manager and experienced help employed continuously.

W. A. CHRYSLER.
A. LAING.

MR. BYER: I feel the thanks of this Association are due to that Committee. We have heard a lot about co-operation, and it may be it will come, but I think one would be blind if he did not recognize the fact that we, as an Association, are not ready to give our support to any scheme of that kind. I don't think there has been any place where the co-operation movement has been a success unless the members were first driven into it by sheer need. My own candid opinion is that there is not enough interest in this Association in favor of it at the present time to make the movement a success. I believe it is a good thing, but it is quite a while off. There is no use trying to force the thing on until it is ripe. I move that the report be laid over, and the thanks of the Association be tendered to the Committee.

MR. GALBRAITH: I second the motion.

THE PRESIDENT put the motion, which on a vote being taken was declared carried.

THE BEHAVIOR OF THE BEE.

(Popular lecture illustrated with Lantern Views.)

E. F. Phillips, Ph.D., Washington, D.C.

I am a little fearful that the subject which has been announced for me to-night may have frightened some of you a little bit, particularly perhaps it has frightened those who are not here, but I would like in the first place to explain the use of the word "behavior" as it has been used in connection with what I shall have to say to-night. It is a word which is not commonly used in bee literature, and I am using it because I am not entirely satisfied with the word which we ordinarily use. We commonly speak of the habits of the honey bee. By that term we mean the sum total of its activities under normal and abnormal conditions. However, as I shall try to point out there are certain reasons why we should not use the word "habit." The word habit as you know is used to designate those activities which we go through and which we execute as a result of past experience. That is, we have habits. The bee does more than merely have habits, although there are certain things which it does habitually even more than we do; and since the word has a double meaning it is better to use the word behavior which covers all the activities of the bee under normal and abnormal conditions.

To address a company of bee-keepers and tell them bee stories may seem almost out of place. I must confess I did not choose the subject which is given to me to-night, and while I have on several occasions told bee stories or used the subject which is announced for me this evening, I have done it in a somewhat different way than I shall try to do to-night. If I were addressing an audience of people who did not know anything about bees, and who could not bring me to task for any slips I might make, I might have a very different tale to tell than I would dare give before a company of bee men. However, there are some things about bee behavior or bee activity that it seems to me bee-keepers should bear more in mind, and as an excuse or an apology for choosing such a subject as this it is perhaps only necessary to call attention to the fact that all of our manipulation and all of our bee work is based on the foundation of the things that bees do under normal and abnormal conditions. If we take the literature on bees it is true, and perhaps unfortunately so, that we find very little discussion of the fundamental principles on which we do our work, and I have often wondered what the state of mind of a beginner must be to come to a convention or to talk with bee-keepers and hear them talk about all these different manipulations, swarm control and honey production and what not, and not get the fundamental things. The bee-keeper gets these from constant and continuous experience with his bees, but I cannot avoid the thought that if we had a simple statement of the behavior of the bees naturally without manipulation that it would give the beginner a foundation on which to judge of the various manipulations; and as things are at the present time he must form this opinion of the manipulations due to his past experience and perhaps has not always formulated well in his own mind the story of bee activity. With that brief apology for the choice of the subject there are several things I want to call to mind before saying anything about the bees themselves. That is the point of view which we should have in the consideration of a topic of this kind. Now, you all know that the poet exercises what we commonly call poetic license in attributing to animals and plants, and even sometimes inanimate objects, thoughts and passions, and ambitions even higher perhaps than man himself possesses. That may be all right for poetry. I have no

criticism to make of poetry, because it has a place in human affairs that we are not in a position to remove from it. However, when we come to a serious discusion of a thing which is a business proposition with us we must get away from all that idea and we must carefully refrain from giving to bees human thoughts and human ideas. Bees are built on a plane totally different from ourselves, and it is quite fatal in the discussion of any subject of this kind to give them these ideals and ideas which we possess. Closely allied to what we may call the poetic attitude towards animals is that attitude too commonly found among the teachers of what is commonly known as nature studies. The bee is an ideal animal for use in the nature study of schools. However, I am very fearful that the stories that are sometimes given to the children in the graded schools are far from being a correct interpretation of bee activity. There are several difficulties which are constantly encountered in the study of bees, and this is true of the study of any of the lower animals. Discussing bees only, I may say that one of the primary difficulties is in actually making observations. Bees do so many things inside of the hive where they are hidden from view that we are unable in many cases to say what they actually do, and outside of the hive it is the same way. The things they do on the wing, the way they pack pollen on their legs for instance and various other things is extremely difficult to observe, because they are moving so rapidly and are so inaccessible it is often very difficult for us to make the observation itself. Another serious difficulty is due to a human characteristic. None of us are satisfied simply with making an observation. It is not enough for us to say that a bee will fly towards the window if liberated in a room, or any of the other things which bees do. We always feel called upon, and perhaps rightly so, to give a reason for anything which we observe; and it is in giving reasons that most of the errors in the discussions of bees are found. Closely allied to what I said concerning the poetic interpretation of animal life is the third obstacle of the three main obstacles which are encountered in the observation of the behavior among the lower organisms, and that is the frequent failure of the observer to distingnish between what we call verifiable and unverifiable facts or principles. There are some things which can be proven. That is, a man will make a statement that the bee usually crawls up a pane of glass. That is a thing which can be verified by any observer by putting a bee under the same circumstances to see whether it does what has been claimed for it. That is a verifiable principle. However, there are certain things which cannot be proven and therefore those are opinions which we have no right to entertain. Take an example. We find when the queen bee is on the comb during the egg laying season as she walks across the comb the worker bees will turn with their heads towards her and touch her with their antennae. That is a verifiable truth. However, if in giving a reason for that we say they do this because of a veneration or love which they have for the queen, we are stating something which may be true but which we have absolutely no way of proving, and therefore, that is an opinion which we absolutely have no right to entertain. We must be very careful then in all our discussion of what bees do and what other animals do as well as man himself for that matter, to distinguish carefully between those things which we can prove and on which we can make good our statements, and those things which we cannot prove.

In the behavior of bees as in the behavior of other animals, including man, we have two kinds of activities. We commonly speak of the bee as doing certain things through instinct. It is an instinct for the bee to live in colonies. A single bee cannot live alone; it cannot reproduce itself alone, of course; it cannot even exist alone. If you take a field bee and put it, properly provided with food, where it will be warm enough it will die in a comparatively short time, and you could say, if

you wanted to use an unverifiable statement, that it is lonesome. That is a thing which we cannot prove, but we do know that if an old bee is isolated from other bees it soon dies. On the other hand we know, too, that if we take a bee young enough that it will live for a longer time; but leaving aside all that we know through instinct bees live in colonies. That illustrates one kind of thing observed in bee life. We may call that an instinct, it is something which is inherent in the bee, something that the bee has, a certain tendency it has when it is born. However, there are other things that the bee does not possess when it is born and which it gains through experience which it has. For instance, when a bee returns to the colony to which it belongs it has this instinct of coming back to the colony, but it does not come back to the colony through instinct. It comes back to the colony because through days of experience it has learned the way back. It has observed the surrounding of the hives, and it comes back then through an adaptation of itself to its environment. We have, then, a plastic activity, one whereby the bee can change its movements in accordance with the condition under which it may be placed; and we have that non-adaptive activity which the bee has as an instinct and with which it is born. It is not always easy to distinguish between those things which a bee does almost automatically and those things which it does through adaptation; they are interwoven in a very complicated manner sometimes, and it is quite difficult at times for us to decide which is which.

Another thing which might be mentioned is the fact that in the study of bee activity we can form conclusions only when the bee does something and the bee moves. Now we may put the bee under certain circumstances which brings on certain changes in the bee, but unless we see that bee moving toward or away from an object presented to it, or see it move in some way or change its position we have no way of knowing whether it responds to the stimulus presented or not. So that in studying the activity we are studying the activities, the motions, which the bee makes on account of the changes presented to it in its environment. In speaking of environment, it might be well to call attention to the fact that environment may be either outside or inside of the animal. To illustrate what I mean by environment which is actually inside of the animal, if any animal were to take some food which would irritate it in some way and cause it to act that food would be a factor in its environment.

Now, ordinarily in talking of bee behavior it would be the orthodox thing to say that the colony consists of three kinds of individuals, and to define what these are and tell something of the conditions which exist in these three kinds of individuals, but to a company of bee men or an audience which is composed largely of bee men those things are superfluous. So I have thought perhaps the best thing to do was to call attention to one or two particularly interesting points which I have never seen, as yet, developed in the *Bee Journal*, and then to show some slides that I have.

I want to call attention first of all to what we may call the division of labor which exists in a colony of bees. We have in the active season several thousand individuals working together in a certain amount of harmony. If you had 30,000 men all together in a small space there would be great confusion unless there was an organized plan under which these 30,000 men might live. If every man sets out to do everything for himself we have the condition which Mr. James spoke of as quite common among the producing classes, not a co-operation. In the bee colony we have co-operation. That is, we see a minimum of superfluous movement. We see a harmony existing in the colony of bees and a division of labor of the colony in a very careful manner. Now we know of no governing individual in the

colony. Of course every bee-keeper knows that the queen is not the governor of the colony in any sense. The queen is the least, perhaps, of all. We find no company of workers that gives orders or anything of that kind which we can recognize, and yet throughout the whole thing we see a most beautiful system of the division of labor of the hive. Some of these things we can explain to a certain extent, but we cannot do very much better than to fall back on the expression Maeterlinck has used in his delightful book on the bee in which he says, "this is done by the spirit of the hive." Of course that is a confession of ignorance. At the same time we still are at sea as to what actually is the factor that brings about this harmony.

In the first place we find a marked division among the bees according to age. Those bees that are less than 14 to 17 days old do the inside work of the hive, they secrete the wax, feed the brood, clean out the hive and do the other inside work of the hive, and those bees that are more than 14 to 17 days old do the outside work. Now, we can change this condition. If, for instance, we were to move a colony of bees when a great many of the field bees were out, remove it to a new location we would then have a colony composed largely of young bees, and if we put a hive on the old stand we would have returning to it the field bee. But they are a group of bees which we could call a colony. If we gave them a queen, composed of old bees, and if it were necessary some of those old bees might begin to secrete the wax, and they would feed the larvae, not so well as the younger bees, but they could adapt themselves to the work of the younger bees if it was absolutely necessary. On the other hand if we had a colony composed largely or exclusively of young bees we would find they would go to the field sooner than would be the case under normal circumstances. But in the normal colony we have a marked division of the labor of the colony according to the age of the bees. It has been stated in a number of bee books and in other places that there is a division of the castes inside of the hive, some which secrete the wax, others which guard the colony, others which clean out the colony and still others that feed the brood and so on, but that is not correct. For instance, if a colony of bees is carefully watched during wax secretion it will be seen that some of the bees hanging in the curtain will separate themselves from the curtain and go over and feed a few of the larvae, or clean out some place that needs cleaning out, and after a while come back and deposit on the comb, which is being built, the wax that, in the meantime, is being secreted in the wax pockets, and they shift around. Those feeding broods will go over and hang in the curtain while others will secrete wax; so there is no demarcation in castes inside of the hive, which has often been reported. But perhaps the most interesting part of the division of labor is that which occurs outside of the hive. Supposing an apiary were located in the region where white clover is abundant, and in the apiary itself and on the grounds there were 100 heads of white clover secreting nectar. Did it ever occur to you that the bees are no more prevalent on the clover within 100 feet of the hive than at some distance. Why is it if these 100 heads of clover contain nectar, as they do, that every bee that comes out of the 100 colonies does not rush for these single heads of clover scattered through the apiary? There must be some system to this, because if a bee's one ambition were to find a clover head naturally they would all go for it. But you don't find bees any more prevalent right in the apiary than you do off a quarter or half a mile or mile or more. We have no very good explanation of this fact which all of us know to be true, but there was some work done by a Frenchman named Bonnier a few years ago which is most interesting in this connection. I will give you an illustration of one of the experiments which he performed out of a great many to show what he thought to exist in the

community of bees. First of all he cut ten twigs off a honey plant,—I have forgotten what he used,—and put them into bottles of water to keep these twigs fresh so that the blossoms which were on them would keep on secreting nectar, and he put them out one afternoon away from all other honey plants in an open field where he had not noticed the bees at work. They were working in other fields and around on the edge of fields where other plants were in bloom, but right out in the middle he placed these ten twigs. He put them out and sat down beside them and waited and no bees came. These were exactly the same kinds of plants as those on which they were working elsewhere. All afternoon no bees came, and his first conclusion was that the abnormal conditions under which he had placed these twigs had stopped nectar secretion. However, when he took a similar twig and put it right where the honey plants were the bees worked on it normally, and he was forced to the conclusion that they were normal in that they were still secreting nectar, but out to this open field no bees came. But the next morning at daylight he was out with these plants again. In a little while a single bee came and flew over this group of plants which he had in the bottles. It alighted on one of the flowers for a very brief space. It did not suck any nectar, did not gather any pollen, simply alighted on one flower long enough for him to touch it with a brush which he had ready to leave a spot on the thorax by which he could identify that bee again if he saw it. The bee flew away and in a short time this bee which he called "A" returned and almost immediately another bee came "B," then they went away and another came which he called "C," giving each one a separate spot on the thorax with different colors so that they could be identified. Finally he had seven bees at work on these twigs which he had cut and all day those seven came back to this same place and worked on the flowers which were in these bottles. Out of the seven two of them gathered pollen all day and five gathered nectar, and those that gathered nectar never touched the pollen that was present in the same flowers, and those that gathered pollen never sucked the nectar. Other bees came but none of them alighted on these flowers. The next day at dawn he was out again and the same seven bees came back and continued working on these same flowers that were still in a perfectly fresh condition and still secreting nectar. When he found that they had retained the same job, he then went to the place where he had cut these twigs and cut what he supposed was an equivalent amount of twigs, and put these in ten bottles which he placed right beside the others. When the bees came back to their work after he had put what he supposed was double the quantity out they flew away from where he was and soon he found that six other bees which he also numbered were at work on this group of twigs. Two of them gathered pollen and four gathered nectar, but he concluded his judgment had not been particularly good in choosing just exactly the right amount: that while it looked to be the same amount to him the bees evidently in some way appreciated there was not quite as much in the second lot as in the first. But 13 bees continued to work all day, four of them gathering nothing but pollen and nine of them gathering nothing but nectar. That is a verifiable experiment, and anyone is at liberty to try the same thing over again. He went further in this in what he concluded was the division of labor outside of the hive in some other interesting experiments. For instance, he had in his apiary a little basin in the ground where the bees usually went for water and he had growing in this little depression some water plants or weeds. The bees were in the habit of alighting on the small leaves and getting water to carry back to the hive. He found if he took and dropped little drops of honey on these leaves when the bees were coming freely for water that the honey was never touched; that they were sent out for water and it was water that they got, and that other

things were not in any way a temptation to them when they were on this one job. In the same way he took plants that were producing pollen only, that were not producing nectar, and put several drops of honey down in the bottoms of those flowers which were not touched; the bees that came were pollen gatherers, and the honey which he put in there which would ordinarily be attractive to a bee, as we suppose, was not touched. He also dropped pollen down by the nectar in other flowers and that was not touched. So he concluded outside of the hive there is a division according to the amount of material which is at hand for the bees to work on. Whether all of his conclusions will be found to be correct is something that we cannot say as yet until the work is repeated by more than one other observer; but it is certainly suggestive on its face when you take into consideration the fact that we do not see a perfect turmoil of bees around those heads of clover right in the apiary, and the bees evidently have that marked out in some way, just how we do not know.

Now you may remember I said he put these plants out in the afternoon and no bees came. That was rather a puzzle to Bonnier for a time, but he repeated experiments of that kind until he came to the conclusion that in the early morning there are sent out from the colony searchers; that is the bee on which he put the first spot and which he named "A" was a searcher, and in some way it communicated to the colony or to the other six bees that came that there was a certain amount of material to be collected. He does not attempt to say how that communication was made, whether there was some sign or whether the other bees simply followed it on its way back or what, but what he claimed was this, that "A" was a searcher; a searcher did not collect anything but returned to the hive. Immediately after that "A" became then a gatherer like the other six, and nothing would have been a temptation to "A" in the way of a fresh supply after that. He concluded that in the mornings searchers were sent out, and when the searchers found enough to keep the colony busy there were no more searchers. He also concluded the reason why the bees did not find out what he put out for them in the afternoon was because the searchers had all found something, and had become gatherers, and that there were no searchers in the afternoon. He repeated this a number of times with honey which he placed out in the afternoon and in the morning and at different hours of the day. If the nectar supply in the field was scant there would be searchers in the afternoon, and they would find the honey he placed out for them almost right away. If on the other hand there was an abundant supply of nectar in the field there would not be any searchers in the afternoon, but if he left it there until the next morning there would be searchers to take it up. Whether that is all true or not, I am simply giving you what Bonnier claimed for the bees, and I hope some of you will try some of these things.

One other thing that perhaps should be mentioned before I show the slides, and that is a discussion of the question of how much bees remember and how much they get by experience—whether the bee is simply a machine that responds as if a button were pressed and it would do a certain thing, or whether it does more than that; whether it gains anything through its experience, and whether it remembers certain things that have happened to it in its past life. Now, you all know if you move a colony of bees a foot or two off to one side the bees return to the old location. It is pretty well demonstrated that the reason they come back to the same place is because in their first flights out as young bees, in the play flight which you see in sunny afternoons when your young bees fly out of the hive and circle around in front of the entrance in their early efforts, when they got to the field they carefully observe the surroundings. Any change in the environment is observed by the bees,

and they mark it carefully. If you move a hive back a foot or two they will stop when they come to the place where the old entrance was. This is often something of a nuisance to the bee-keeper. When he wants to make a few shifts he has to make his move slowly so that the bees learn the new location. These things show conclusively that the bee has a memory, that it learns to know by doing something in its activity. There is another proof of the fact that bees remember certain things and that is that we can compel those bees to forget; some of these things which they learn in this way by experience they can be brought to forget entirely. For instance in swarming; a colony of bees has been in the habit of coming back to a certain location, but when they swarm and are put into another hive or find a place for themselves under natural conditions in the woods they no longer come back to the old place but go to the new. That is, they have forgotten or have quit considering the old location. But even better than that is what we can do experimentally with bees showing that they have a memory. For instance if a colony of bees is chloroformed until the bees are stupified and drop to the bottom board, and then they are allowed to revive and become active again, that is, they are chloroformed not sufficiently to kill them—if then they are allowed to come to they have forgotten all those things which they learned through previous experience, they can then be moved a foot or two feet away or any distance from the old place and on flying out they return to the new location and do not return to the place to which they formerly returned and which they learned to know through memory. The same thing can be done by tobacco smoke and by immersing them in water to the point where they are almost dead. These things show us if we can teach an animal to forget certain things we are thereby proving that the animal had something which it had actually remembered.

I want now to show a few slides. You will readily recognize the fact that there are a great many things in bee behavior which cannot be shown on slides or in a picture at all. I thought it would be well to show a few illustrations which I have on the anatomy of the bee so that you will know a little better the things which it has to do.

(Dr. Phillips then interested and delighted the audience with a large number of excellent slides showing the anatomy of the bee, which he explained as the slides were shown.)

THE CHAIRMAN: Mr. Craig being unfortunately unable to be present this morning, the very pleasant duty devolves upon me to introduce to you the new President of this Association.

MR. NOLAN: I am appearing this morning in the role of the new President with some misgivings, but I thank you very much for the honor that you have conferred upon me. I have been with bees since I was in my teens, and I feel that perhaps while I have not done a great deal for the Association, still the Association has done a great deal for me. In accepting the office of President I feel that I have had conferred upon me an honor that I do not think that I have merited, but I have the interests of the Association at heart and will do all I can for the bee-keepers. I have been a bee-keeper for a long time, but not perhaps as good a bee-keeper as I would like to be.

THE PLEASURES OF BEE-KEEPING.

Miss E. Robson, Ilderton.

I feel a certain amount of diffidence in coming before a number of bee-keepers and talking to them, because I know that you must know so much more than I know about bee-keeping. This little talk which has been assigned to me is perhaps not of any great practical value, but I think was put in for the sake of introducing a little variety.

It has been said to me that it is my sister that does the work and I do the talking. I know that I do at least some of the work, and you know that I also do just a little bit of the talking. A long time ago I did have some training, the object of which was to enable me to speak to a meeting, and I soon found that I had a certain amount of training for talking, but nothing to talk about. Then it was that I took up bee-keeping, and you know what the result has been.

I have to confess to you that being a woman I am not like other bee-keepers. I have not got a method, and I am glad of it, though they tell me that if I had a little more system I would accomplish more; but whenever I go about through the country I find that bee-keepers are exceedingly ready to talk to me and tell me about their system of handling bees. I can always listen sympathetically, and so I have the choice of a great many systems, and I may yet, perhaps, evolve a practical system. When I have done so I shall be only too happy to tell you of my method of handling bees. For the present I have to be content to tell you something of the pleasures of bee-keeping. These are not confined to any particular system, but are inherent in the business.

Last winter I took a walk through my bee-yard and the snow was piled over the hives, and it required a great deal of imagination to picture the life hidden away in these hives. There was not very much to make bee-keeping seem attractive. From the bee-yard I crossed over to the hen house, and they were scratching away, and if there is one thing that approaches the humming of the bees it is the cackle of the hens. From the henhouse I went to the stables and there felt the warm breath of the cattle as they were munching contentedly, and in the horse stable there were the horses neat and shiny. How proud we are of their intelligence and their strength, and here it seemed to me that there was something to talk about, something that would take up the whole of a man's time and interest, and I confess that I began to think that bee-keeping did not look so big or attractive at that particular moment.

But in a few days the weather changed, the snow melted, and once more there was the hum of the bees in the air. A little later it was warm enough to remove the coverings, and once more in all their beauty and attractiveness they come to the light.

It seems to me that one of their greatest charms is their remoteness from you. If we work with them and handle them they remain perfectly indifferent to us, and under the influence of their swarming instinct they will return to their primitive condition. Their wealth is different from ours, and they go about their work in their own way.

When we think of the elaborate machinery in their own bodies, their marvellous skill in construction and the mathematical exactness of their work, and their absolute subservience to authority, their marvellous carefulness in preparing their stores of honey, the diversified economy of the hive, and all the wonderful things that go on, the problem of sex worked out in the queen, and the drones and the workers, the

wonderful obedience to law, and the exactness of their work in comparison with our hap-hazard methods, we cannot fail to do them reverence, even while using them for the selfish purpose of making a living. This has its influence upon bee-keepers; it helps to make them clean and simple at heart as well, to be always enthusiastic, to be always honest.

It seems to me that bee-keeping has made of bee-keepers one great brotherhood, and when bee-keeper meets bee-keeper it is as if one met a friend, and they always talk bees. One of the most successful bee-keepers I know is Mr. McEwen. Other men may have more bees and make more money, but no man has his heart more wrapped up in the bees, and he is always ready to talk about them. One night after nine o'clock we were out in the yard with a lantern that he might show me his practical methods of accomplishing certain things. Mr. Chalmers was showing me his wonderful method of wintering, by which he has accomplished so much in the wintering of his bees: and if you want to hear about it I am sure he will be glad to tell you. Then there is our old friend Mr. McEvoy; you know how he is ready to talk about foul brood and show you all about it; at the mere mention of European foul brood you can see how he bristles up. Perhaps some of the things we accomplish are not of much value, but it gives you an interest in life and something to live for.

Stevenson said once that aspiration is a joy forever. I think bee-keeping comes under that description.

I am talking to you about the pleasures of bee-keeping, and I think that it is true of every one of us that we can look back upon our work, and in it there are certain moments which stand out as moments of preëminent pleasure. There is the first flight of the bees in spring, when we can estimate how our colonies have wintered. Then there is the first peep into the hives and we think of the harvests that are to come. There is the sight of the fields and the orchards white with blossom. There is the delight of sitting on a Sunday afternoon and watching the bees coming in from the fields, and perhaps best of all the long summer days spent in the open air. One of our great writers has given us a most delightful book on the life of the honey bee; as you read his book you cannot fail to get something out of it. He knew bees; he was no doubt an advanced student of bee-keeping, but he did not know the pleasures of watching the seasons change, and the anxiety and interest of those who make their living by the bees; that has reference to the bee-keepers alone.

Now, in conclusion, perhaps I may be permitted to repeat a few verses which appeared in a recent issue of the *Canadian Bee-keepers' Journal*:

Have you seen the meadows glowing,
With the clover all in bloom?
Have you smelt its fragrance blowing
Through the balmy month of June?

Have you heard the bees a-humming
Through the long and sunny days?
Have you seen their bright wings flashing
In the busy, busy May?

Have you seen them coming, laden,
Like a vast cloud from the field,
Laden with the choicest sweetness
That the golden blossoms yield?

Have you listened in the moonlight
To their deep and precious hum?
Have you felt your pulses quicken
With the harvest that's to come.

Have you seen the hives' hid treasure
When the combs are growing white ?
Have you seen the rich drops glisten
When you hold them to the light.

Have you weighted up the super
When it almost broke your back,
And placed honey underneath it
For the busy bees to pack ?

Have you heard the grand vibration
Of their myriad wings in air,
Which tells you very truly
That the swarm is surely there ?

In a high old orchard tree top,
Seen it cluster rich and brown;
Have you climbed a wobbly ladder
And brought it safely down ?

Have you smelt the fields all laden
With their sweetly scented flowers,
Which the bees will come to rifle
Through the fleeting daylight hours ?

For there's nothing that I know of
Tempts the bees so far afield,
As the pearly clustering blossoms,
With their precious sweets concealed.

Have you carried in the heavy
Combs, all ready to extract,
And seen the white wax crinkle up
At the opening knives' impact ?

Have you filled your jars with honey,
Polished them so bright and clean,
And sent them hopefully to market,
Fit food for a king or queen ?

If you have you've learned some secrets
From the glowing summer days,
Which take you near to nature's heart,
And will teach you all her ways.

For the heart of all the summer
Is the humming of the bees;
In the fragrant clover blossoms,
And the whispering basswood trees.

MY EXPERIENCE WITH THE TREATMENT OF EUROPEAN FOUL BROOD.

Mr. Charles Stewart, State Apiary Inspector, Johnstown, N.Y.

I had long looked forward to the time when I could meet with the Canadian bee-keepers. I think that there was the most discouraged lot of bee-keepers that I ever saw in my life, when we first took up this work, and when we look back now and remember their troubles, we can see how easily their trouble could have been avoided.

It is necessary to have an inspector, and it is necessary that that inspector, in addition to knowing how to handle bees must know how to handle men; he must not only be an inspector but he must be a father to the bee men. When we took

up the work in New York State, we found men utterly discouraged, and if you could have seen them you would have pitied them from the bottom of your heart, so that it was necessary not only to encourage these men and women but even to assist them financially at times. Sometimes men have said to me, "Mr. Stewart, you have the power and the authority and all that, but what you propose means the ruination of us. You presume that you know more about these things than we do." One man took my advice, and the following year I saw his exhibit at the New York State Fair and it was a beautiful exhibit, and when he met me afterwards he said, "Mr. Stewart, I will have to thank you." He said that he had refused $3,500 for his crop the day before. There are many such cases, and these men feel convinced that our system is right.

We easily realise that the spread of disease was brought about by the bees intermingling in the yards. You would find a colony in a yard that was badly diseased and to a lesser extent in the same area you would find others, which showed plainly enough that the bees intermingled. This was simple, but it was a long time before we found out how the disease would appear three or four miles away. It so happened that we had a meeting of bee-keepers and one of them said that he would like to know the truth about this matter, and wanted to know if we were going to be able to keep black brood from his apiary. I said we hoped to, but I was afraid not. He said, My advice would be, I would double your number and Italianize every colony. These were the very first ones diseased, and they were very badly diseased. We sent an inspector into that section and about four miles from his yard we found an apiary where all the bees were diseased, and we found this colony of Italians were in every diseased colony. I question whether a honey bee ever comes out from a colony that is diseased that there are no germs that may drop into any convenient colony it finds. It has been suggested that the seeds of disease may be left in the hive and that is verified by some experiments. It is quite important to remember, and I would like to make it very emphatic, that you ought to Italianize your bees. This gentleman that I mentioned to you whose apiary we saw last year sold his crop for $500. His idea was to Italianize, but the Italians do not mix so much as the black bees, so that in a mixed yard you may find plenty of Italians among the blacks and not many blacks among the Italians. Of this we may be positive, that the Italians clean up better than any other race we know of. In fact, they are almost too busy perhaps. I have known of colonies where disease existed and before the caretaker found the cause of the trouble the Italians had found it and removed it.

I can take you to apiaries in New York State that have stood all through this disease for fourteen years and have never yet had a colony develop it. This man was not a very good bee-keeper, but he did have one thing, he was a great lover of the beautiful Italians, and he had gathered bees from all over and he certainly did have a vigorous strain of bees. I recollect going there and he insisted on showing me his sweetheart queen, as he called her, and as he opened the hive four or five of them hit him right in the face. This yard stood all through the trouble without shaking the colonies, because they were Italians, and I think they discovered only one or two very slightly diseased.

I would like to make that matter of Italianizing emphatic; you cannot afford to neglect it.

It is necessary to procure a strain of Italians that are vigorous. Italians vary greatly; but if you have a good strain they will give you a pretty clear idea of what is happening in the yard.

Now we come to the matter of foul brood, and you have no doubt had this experience, that if the bees are small, inferior, like the blacks, the yard will run down very rapidly. If they were hybrids the chances were pretty good for saving a lot of them. If they were Italians, the chances were still better; you can have an apiary of Italians and move them right into the diseased territory. The system that we rely on is shaking and Italianizing. I have watched this thing very carefully; I have had some for ten years, and perhaps longer, and during that time there were only four or five very slightly diseased, and I think you can clean up that disease. With our system of wax making, you can, if you are very careful to work it out, get wax enough to replace.

If you have not got bees enough so that you make them stand first, it is a good thing for you if you will get enough so that they constitute your chief interest. Where your treasure is, there will your heart be also, and if you have enough interest and enough money invested in bees, you will find that you will place them first among the necessary things, and you will find in time that it will become a specialty with you. It lends a zest to everything else. It is a vocation, while everything else is an avocation.

This Italianizing and shaking of the bees has been the salvation of the New York State bee-keepers. I wish I could draw a picture for you of how matters stood when we began this work and compare it with what they are now. The men were thoroughly discouraged, their living was destroyed, there was no honey coming, that is, no marketable honey, the bees were too weak. In place of that, we have finer apiaries than we ever had before, we have better bee-keepers. Any man that was slovenly and did not care enough for his bees to accept the inspector's help dropped out, and the more I see of it the more convinced I am that the inspector should not help some of them at all, if they will not help themselves. We used to keep on using the old worn out combs; we found the new combs paid better, that the bees did better and were more prosperous than they ever were before. I think the combs do get too old and they should be renewed frequently. This plan will inevitably effect a great improvement. It is the colonies with old combs that need to be fed and helped.

Another thing that we have got to have in order to get better crops is better bees, and better methods. I do not fear disease if you have a strain of bees that will clean it up immediately. In many respects this has been a blessing to the bee-keepers in New York State. If a man is not in trouble it is pretty hard to make him believe that he has got to work, and it certainly has been a blessing in Eastern New York and to some extent also further west in the State. I found in every case where it struck the apiary for the first time that it is much more virulent than it is later on. The reason for that is that you get rid of most of the weak colonies in your yard. They are the first to drop out, and as time goes along they yield more quickly to treatment; you will not have so many re-infections. We advocate disinfecting and we shake them. I have not disinfected a hive for years, although there are people with whom when we say to them "You had better disinfect this hive pretty thoroughly," it works out good, as it makes him careful, even if he does not do it.

MR. MCEVOY: You don't believe the hive can get it?

MR. STEWART: No, it can't. Is it not an inconsistent thing to disinfect the hives? A vigorous strain of Italians in the hive will keep it cleaned up. Now, we only shake them once for black brood.

Mr. McEvoy: Can you cure a colony in that yard with one shaking when they are not all shaken?

Mr. Stewart: No; we shake it once. There may be reinfection, and I would prefer to shake eight or ten twice than to shake them all twice. If you can get along by shaking them once, you would rather not go back and shake forty of them a second time. I would certainly go back and look them over.

A Member: How much foundation would you put in the forms?

Mr. Stewart: We were putting only a narrow strip, and our combs were made the full size of the foundation. We did not feel like investing so much money in comb foundation, so we only used a little narrow strip.

When we are out on our inspection trips we take the best bee-keeper we can find along with us, because we know that he will take an interest in the work, and show him how we do our work and teach him all we can in regard to it. He needs, of course, to be a man who is on pretty good terms with his neighbors.

I know of one instance where a man had thirty or forty colonies, and he established a kind of hospital yard, and the neighbors took their bees there for treatment, and thus had the advantages of isolation. I think that work among the bees would be very different to what it is now if that were more often done. It is not always possible to Italianize your bees if you establish your hospital near anyone else, but it is a grand thing.

A Member: How far away should they be?

Mr. Stewart: I should not want them nearer than five miles.

A Member: You would not think it would be safe?

Mr. Stewart: Four miles ordinarily is pretty safe, but there is a chance that they may go four miles.

A Member: Do you think there is any great danger of the drones carrying it?

Mr. Stewart: I do not think that they go any great distance from the hive, and inasmuch as they do not make any honey I do not think there is any great danger from the drones.

A Member: What is your opinion of the methods by which European foul brood spreads?

Mr. Stewart: I think by the bees intermingling. I think if you had it all Italianized I think that you would not have much bother about spreading. I do not think that you would find that condition.

A Member: You said that you would Italianize every colony and double your bees.

Mr. Stewart: That was an isolated case where this man was endeavouring to build up his business, and he is now making a very fine income. At that time he was very much afraid he was going to lose heavily, and I suggested that the better plan would be to run up the working colonies, which he did; and in that section they are pretty nearly all Italianized. Any man situated as he was I would advise him to double the number and Italianize.

A Member: Have you ever had any chance to compare the Cyprians with the Italians?

Mr. Stewart: I think the Cyprians do clean up very well. Mr. Stevens had them, and he pronounced them good.

A Member: What do you think of the liability of disease spreading through the cages in shipping queens?

MR. STEWART: I do not think there is much danger. Take the workers out and put the queen in a separate cage; I have never found a case yet where I was able to trace that any disease came from the traffic in queens. I think we should have a law requiring yards to be free from disease.

We found that there was no diseased colony in any queen breeder's yard in New York State. Some one may start up and get a bad lot of queens, and disease appears and it may linger in your yard for a long time, and you think you get it in that way. One man down in Syracuse had an experience like that, he found one year that his bees were not doing very well, and when he came to examine them he found that they were all diseased with European foul brood. He went out and sold them. Mr. Stevens, of course, told him that this was contrary to law, and he felt very badly about it. We had to look the man up and tell him we would not prosecute him if he would tell us where all the bees went. We never prosecuted him, though he richly deserved it, but that was not the way to get the results we are after as inspectors.

A MEMBER: How has the system worked out of having a hive queenless? It is called the Alexander system.

MR. STEWART: I remember a case of a man who had pretty well lost heart; he was much discouraged, and just about all in, both in health and financially. He said he was afraid he was going to lose all his bees, that he was likely to lose everything he had. I gave him the best advice I could: I said that I was only an average man in this line, and what I had done he could do. I told him to adopt the plan of shaking and Italianizing. He said that from that time they began to gain and next season he began to remove the queen, and let the hive be queenless for a certain length of time. Then, too, he had reached that particular stage where the virulence of the disease was not so great, but this system succeeded very well with him. Take this same system among the black bees where the disease is just coming and it was worthless: it did not cure; it cured temporarily; that was all. I would not advise any man when first he has European or American foul brood to adopt that plan; it worked all right in his case, but he had got over the worst of his trouble.

A MEMBER: Your inspectors have the privilege of working all the season, or are they cut off at such a time?

MR. STEWART: The question arose with me whether I should take up this outside work or run my own apiaries. But does not this work need to be done in order to protect my own apiaries? Your son or daughter can carry on this thing and you can oversee it. I did not suppose they would like to have me away from home so much. At that time we got $60 a month for eight months, and there came a time that we were about to abandon this work altogether; it didn't pay. We brought the matter to the notice of the department and they said it would be a farce to ask men to go round and expect them to make less than they could make out of their bees if they were at home, and they asked us to say what we wanted. Well, the result of it was that we settled on a maximum salary of $800 a year and our expenses, and at that, the milk inspectors do not work as hard as we do and they get $1,200. If we made application we could get more pay, which we refused to do for certain reasons. Later on, when we were ready to go out again, some of them were a little dissatisfied, and they told us to take one day out of the week for your own business, and that appealed to us, and so now we have the privilege of taking one day out of the week for necessary work in connection

with our own apiaries. If you work on Sunday, then you have another day, and we have another day for correspondence. In that way we can keep our work up pretty close, for really you have got two days to yourself. We are paid by the State of New York. The State fosters anything that tends to the profit of the people. For instance, New York State alone sells about two million dollars' worth of honey a year, so that the department fosters this industry.

MR. MCEVOY: The American system is far ahead of ours; if there is disease anywhere they can go right after it. But here they have no authority, and the disease is allowed to spread.

A MEMBER: What supervision has the Department of Agriculture over you inspectors. How do they know when you are out on your work?

MR. STEWART: Every evening you make out a report. You put down your name, your address, and your official title, and you will put down all the money you ever expect to get back in the way of expenses. In another place you will put down the time that you left home or wherever it was, and the next place that you will arrive at; how you travelled, whether by livery, trolley car or steam road; the number of miles and the time it took you; the time that you got to the yard and the condition in which you found things. These are just a few of the little things that you have got to put down, and the department has all this on a file, and so they have a very efficient check on your work. One man reported that he was in Albany when he was 200 miles away, and he was laid off for a month. We get $800 a year for eight months, and we have considerable leisure in the summer; but we have twice as much to do as we ought to have to do the rest of the time, and we lead a pretty strenuous life. The payments used to cease on 1st December, and the allowance for expenses were all cut off, and we had to furnish our own postage during the winter months. For the last two or three years, owing to the large amount of institute work, the department has allowed us when necessary to file our expenses during the winter months, but you get no expenses outside of your State. It is something to say that our four inspectors have worked twelve years, and I never had an item cut out. They are very careful with their money.

MR. MCEVOY: You are inspecting all the year round. Our men are liable to be cut off any time at all.

MR. PETTIT: Since a comparison has been made between the two systems I may say that the week I visited Mr. Stewart I called on the department at Albany, New York, to see their system. We are spending about the same money as they do, but we have sixteen men available in the inspection season. This inspection work should be done before the end of June. In New York state they have four men and their work is being extended over the whole season, and the men whom they are not able to visit in the early part of the season have to wait till the fall. We are all the time looking for men and suggestions along the line of improving the inspection.

MR. STEWART: It is certainly a good thing to get as much of your inspection done as early as possible in the season.

MR. MCEVOY: This idea of calling them off in July has done harm: it ought not to be done: there ought to be more men, and they should keep them at it.

MR. PETTIT: The more capable men in our Province seem to drop out.

MR. STEWART: They will. When they understand the bee business properly they can make more money at it. We have had men who have sold their crop for as high as $10,000, and we have quite a good many that sell $5,000 worth of

honey in a year. I can give you the names of a number that sell from $3,000 worth up, and a great number of smaller ones. The inspector has friendly relations with these men. He does not go out to tell them what amount of disease they have got, or what the bees should do or what the crop is worth. His relations with them are confidential. He does not tell another man these facts about his neighbours. He keeps that to himself, and that is why he has the confidence of these bee-keepers.

REPORT OF THE COMMITTEE ON LEGISLATION.

The Committee on Dominion Legislation composed of J. L. Byer, H. G. Sibbald, Jas. Armstrong, E. H. Clare, G. Cornell, M. Pettit, W. A. Chrysler, recommended as follows:

That the Ontario Bee-Keepers' Association ask for legislation to cover the following points:

1. That customs officers at all ports of entry be required to at once notify the proper authorities of every shipment of bees or used hives or appurtenances coming into the country, giving names of shipper and receiver and points from which and to which shipped, and that an inspector be sent at once to examine the same.

Further that a certificate of health be required from the official inspector of the state or province from which the goods were shipped.

2. That the said legislation be comprehensive enough to prevent the shipping of diseased bees, hives or appliances from one province to another.

3. That in general the Act be patterned after the Ontario Act.

4. That Dominion Inspectors be appointed to look after such special cases that cannot be cared for by the provincial inspectors.

5. That no hindrance be put upon the free importation of queens into Canada.

The clauses, being read and discussed were carried.

RESOLUTIONS IN MEMORIAM.

A resolution of condolence on the death of Mrs. R. Lowey was carried.

A resolution of thanks to the speakers from the United States was carried.

MR. COUSE: I do not suppose that many of you failed to notice that D. A. Jones, the first president of this association died recently. He was President in 1879, 1880, and 1881. I feel that this Association to-day is indebted to Mr. Jones. There was no person that did what he did. He was an exceptional man, a liberal man in every way. He was not afraid to spend a hundred dollars or a thouasnd dollars, and there is no doubt he did a great deal for bee-keeping in this country. The first exhibition of honey that was made in the city of Toronto was made by D. A. Jones, and he was then the head bee-keeper of our Dominion. That exhibit was really the beginning of the industry of bee-keeping in the Province of Ontario. I think that we should in some way make reference to his death. Mrs. Jones died some years age, and they left no family. I certainly think we should draw up a resolution with reference to Mr. Jones.

THE CHAIRMAN: I have had the pleasure of knowing D. A. Jones personally nearly all my life, and when he was almost the only bee-keeper. He was just as liberal with information and knowledge as any bee-keeper I ever knew. He was a whole-souled, public spirited man, and it would be a mistake to omit a reference to him just now.

Mr. Evans moved, seconded by Mr. McEvoy that the matter of preparing a suitable resolution in regard to the death of Mr. Jones be left in the hands of the Executive. Carried.

The Chairman: I would ask Mr. Byers to present to you the report of the Directors regarding the money that was given for the prizes at the Horticultural show.

PRIZES FOR EXHIBITION HONEY.

Mr. Byers: It has been remarked that the exhibit at the show was not all what it ought to be, but I am not finding any fault. It was talked over at the directors' meeting and they decided to bring it before the Association as to having this $300 that is given for prizes go to the association for making a large exhibit. We did not go into details at all as to what could be done along that line.

Mr. Timkins: Is that for the Association to buy honey and make an exhibit of it?

The Chairman: The directors of course did not decide anything of that kind; we just left it for the meeting to decide whether we should continue spending that money in prizes or not.

A Member: An exhibitor does not know what space is to be allotted to him, and he can not make any plans for a display at all. He has no chance to put up a creditable exhibit that will be a credit to himself and an honor to the Association. I have advocated that for quite a few years, that the honey should be judged on its merits, and that the money which is set apart for these exhibition purposes should be given to them to encourage the individual bee-keeper to put up a first-class article. You would know the space and you would have the means of putting up a creditable exhibit such as the individual bee-keeper cannot do.

Mr. Couse: Is that going to bring the honey industry before the people of this Province. Last year this method was brought up. The average man has not the time or the means to put up a lot of honey. We can get all the honey we want for the asking for it. When an exhibition was made in London, England, we got 40,000 pounds of honey. At the time of the World's Fair in Chicago we got more than we wanted. We can always get lots of honey; the question is always the putting of it up. Would it not be well to get a man to put it up? Many of them do this. It would not prevent individuals from showing small quantities of honey for prizes. But we want a great big exhibit of Ontario honey.

The Secretary: If all goes well we will have a good display next year. It is likely that we will get into a building where we will be able to make a better display than we can now. At the present time there is $300 granted for prizes. My idea was that the $300 could be used, and the honey could be sold at the close of the show, and the only expense is the storage and the transportation and the putting of it up. We should get the best man that can be got in the city or province.

A Member: A bee-keeper may have the best honey in the country, but if it is not put up right it will not make a good exhibit.

Mr. Harkness: I would suggest that our district representatives look into this matter, see what honey they can get and have it brought here and have a good man to put it up, and they will have a far better display than by doing the way they are doing now. Let our representatives have the power to appoint one man to put it up for them as they see fit. My idea is to have a provincial exhibit; we want to advertise the honey that is made in Ontario.

Miss Ethel Robson: It has been suggested that we follow out the same plan that has been suggested by Mr. Harkness. It might be possible to work up this exhibit by having the Ontario Association take it up as a whole and let the county associations work up the supplies. We have quite a number of county associations, and surely they are equal to the task of sending in a fair exhibit and have one man at the head to plan the whole thing. Any county that liked could send a man to act in an advisory capacity. I think that the Women's Institutes work along these lines.

Mr. Harkness: There is not so much competition in this show; it is not meant for it.

Miss Robson: It is understood that this is really a co-operative Ontario exhibit, and I move that the Ontario Association take hold of the matter and make a co-operative honey exhibit at the next flower, fruit and honey show to be held in Toronto, and that the county associations take up this matter of getting up and supplying the exhibits.

Mr. Galbraith: I think the details can be left to the Executive of this Association. I have much pleasure in seconding Miss Robson's motion. I think that the Executive or whoever looks after the selection of the honey should get after it in time before the honey harvest so that those who are going to send in can save their nice honey, and besides this, they want to know how much they can get and where they are going to get it. It will be hard to get it later on. The bee-keepers will want to make preparation for this early.

Mr. Smith: There are many of the local associations not represented here, and they do not know what is going to be done.

Mr. Galbraith: We must get in touch with the county associations, all of them, that are affiliated with this association.

Miss Robson: I would like to amend that resolution that a committee be appointed immediately, and that they communicate with the county associations at once, and that their proceedings be published in the *Canadian Bee Journal* so that we will all know what is being done. All the plans should be made now. Bee-keepers are too busy in the summer to be planning out things like that.

The above resolution moved by Miss Robson and seconded by Mr. Galbraith, is put to the meeting and declared carried.

A vote of thanks to Mr. Craig for presiding at the convention was moved by Mr. Sibbald, seconded by Mr. Timber and carried.

A vote of thanks to the County Council of York for the use of the hall was moved by Mr. Timber, seconded by Mr. Grainger and carried.

The Convention then adjourned.

ANNUAL REPORTS

OF THE

DAIRYMEN'S ASSOCIATIONS

OF THE

PROVINCE OF ONTARIO

1911

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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TORONTO.

To His Honour COL. SIR JOHN MORISON GIBSON, K.C.M.G., etc., **etc., etc.,**

Lieutenant-Governor of the Province of Ontario.

May it Please your Honour:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Dairymen's Association of Eastern Ontario for 1911, and the Report of the Dairymen's Association of Western Ontario for 1911.

Respectfully submitted,

JAMES S. DUFF,

Minister of Agriculture.

Toronto, 1912.

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DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO

OFFICERS FOR 1912.

President—J. H. Singleton, Smith's Falls.
1st Vice-President—G. A. Gillespie, Peterborough.
2nd Vice-President—J. A. Sanderson, Oxford Station.
3rd Vice-President—J. N. Stone, Norham.
Secretary—T. A. Thompson, Almonte.
Treasurer—James R. Anderson, Mountain View.

Directors:

Victoria, Ontario and Haliburton ..... H. Glendinning, Manilla.
Peterboro ..... G. A. Gillespie, Peterboro.
Hastings ..... T. H. Thompson, Madoc.
Northumberland ..... J. Nelson Stone, Norham.
Prince Edward ..... Willett Farley, Cannifton.
Lennox and Addington ..... Chas. Anderson, Overton.
Frontenac ..... Joseph McGrath, Mount Chesney.
Leeds ..... Geo. Leggatt, Newboro.
Dundas ..... J. A. Campbell, Ormond.
Glengarry ..... Jno. F. McGregor, Alexandria.
Prescott ..... Neil Fraser, Vankleek Hill.
Stormont ..... W. J. Johnston, Eamer's Corners.
Russell ..... W. H. Olmstead, Bearbrook.
Renfrew ..... J. H. Singleton, Smith's Falls.
Lanark ..... Wesley Willows, McCreary.
Carleton ..... Edward Kidd, M.P., North Gower.
Grenville ..... Jas. A. Sanderson, Oxford Station.
G. G. Publow, Chief Dairy Instructor, Kingston.

Auditors:

J. A. Kerr, Belleville. J. W. Hyatt, West Lake.

FINANCIAL STATEMENT FOR 1911.

Receipts.		Expenditures.	
Cash on hand from previous year	$784 72	Perth Pay Sheet, Directors and Speakers	$538 48
Grant, County of Lanark	200 00	Pay Sheet, No. 2, Kingston	133 45
" Town of Perth	100 00	Pay Sheet, No. 3, Toronto	190 00
" Ontario Government	500 00	Alfred Street, salary, 1911	360 00
From programme advertisements	320 00	Alfred Street, expenses, 1911	213 35
Refund, livery bill, G. G. Publow	2 00	J. W. Whitton, salary	120 00
Membership fees	167 00	J. W. Whitton, expenses	16 45
From prosecutions	1,024 38	F. W. Brenton, salary	240 00
Interest, Standard Bank	30 00	F. W. Brenton, expenses	174 55
		Speakers' expenses	476 70
		Advertising and printing	500 80
		Farm and Dairy, for members' fees	115 50
		Officers' stationery, stamps, telephone and express	135 09
		G. G. Publow, expenses to Europe	500 00
		Farm and Dairy, Dairy Farms' Competition	150 00
		Salaries, Secretary	300 00
		" Treasurer	100 00
		" Stenographer	90 00
		Expenses, District Meetings	289 11
		Balance on hand	485 22
	$5,128 70	Total	$5,128 70

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO

OFFICERS FOR 1912.

President—D. A. Dempsey, Stratford.
1st Vice-President—S. R. Wallace, Burgessville.
2nd Vice-President—S. E. Facey, Harrietsville.
3rd Vice-President—J. B. Smith, Alton.
Secretary-Treasurer—Frank Herns, London.

Directors:

J. N. Paget, Canboro.
T. Ballantyne, Stratford.
J. H. Scott, Exeter.
J. B. Muir, Ingersoll.
James Bristow, St. Thomas.
R. Myrick, Springford.

Auditors:

J. A. Nelles, London.
J. C. Hegler, Ingersoll.

Representatives:

Western Fair, London—Frank Herns, London; John Brodie, Mapleton.
Canadian National Exhibition, Toronto—Frank Herns, London; Robert Johnston, Woodstock.

FINANCIAL STATEMENT

For the Year Ending December 31st, 1911.

Receipts.		Expenditure.	
Balance from previous year	$78 14	Prizes for cheese and butter ..	$381 00
Members' fees	300 00	Prizes for dairy herd	79 00
Legislation grant	2,000 00	Expenses for Convention	149 03
Prosecutions	440 00	Directors' fees and expenses .	203 80
Donation for special prize ...	10 00	Stenographer's salary	357 00
Sale of Dairy Exhibits	2,008 96	Postage and stationery	95 75
Advertising in programme....	144 75	Printing	258 04
		Advertising	119 53
		Judges' fees and expenses ...	40 25
		Lecturer's expenses	7 05
		Prosecutor's salary	207 50
		Prosecutor's expenses	62 80
		Periodicals for members	220 04
		Reporting Convention	75 00
		Auditors' fees	13 00
		Purchase of exhibits	2,012 09
		Office, light, cleaning, etc.	72 98
		Office furniture	18 90
		Office rent	120 00
		Telegram and telephone	84 81
		Express and cold storage	18 79
		Half fines to factories	200 00
		Interest on overdraft	2 10
		Refund to members	2 00
		Balance on hand	161 31
	$4,981 85		$4,981 85

Dairymen's Association of Eastern Ontario.

ANNUAL MEETING.

The Thirty-fifth Annual Convention of the Dairymen's Association of Eastern Ontario was held in the Town Hall, Campbellford, on the 3rd, 4th, and 5th of January, 1912.

Notwithstanding the extremely cold weather that prevailed at the time of the Convention, there was a splendid attendance at every meeting of the Association. The evening sessions were crowded to the doors. The hall was tastefully decorated for the occasion, and everything done by the Reeve and Deputy Reeve to make the dairymen comfortable while in Campbellford.

The President of the Association, Henry Glendinning of Manilla, Ontario, occupied the chair at the opening session, and after calling the meeting to order delivered his annual address.

PRESIDENT'S ADDRESS.

HENRY GLENDINNING, MANILLA.

It is with pleasure as President of the Dairymen's Association of Eastern Ontario I welcome you to the Thirty-fifth Annual Convention of the Association to the town of Campbellford, which has been named the second Niagara of Canada on account of the large amount of electrical power which the Trent River is capable of supplying.

There was held a meeting in each dairy district in Eastern Ontario with the view of giving the dairymen of all sections a voice in who shall represent them as a director on the Board of this Association. These meetings were addressed by Mr. G. G. Publow, Chief Instructor for Eastern Ontario and myself, and the people showed greater interest in the meetings than ever before. The names of the new directors will be submitted to you at this Convention for your confirmation, thus carrying out the truly democratic spirit of the Association.

Dairy conditions during the past season have been what might be termed sectional. West of about the city of Belleville was marked by the clovers and grasses being badly killed in the spring, followed by very hot and dry weather that produced poor pastures and light crops of hay and grain. The eastern section did not suffer to any great extent from the spring frosts and winds, and they were blessed with an abundance of rain which has given them one of the best seasons in the dairy business.

The price of cheese reached a record figure during September when it sold for 15 cents on the cheese boards. This is the highest figure in the history of the cheese trade of Canada. At that time the cows were giving a small quantity of milk. The income to the farmers was much less than the casual observer might be led to believe from the high prices prevailing at the time.

The lesson of the past season should impress upon us as farmers the importance of having a plentiful supply of water and feed to supplement the pastures in the form of peas and oats, clover alfalfa, or corn silage, so as to keep up the milk flow.

We should bear in mind that it is only what we get over the cost of production wherein we have a profit. Assuming that it cost ten cents to produce a pound of cheese, when we sell for 11 cents we have only one cent profit; when we sell for 15 cents per pound the price which it brought last September, we had five cents profit, or five times as much profit as when we sell for 11 cents.

Owing to the excessive heat during a large part of the summer it kept Mr. Publow and his staff of able assistants busy giving instructions to makers to help them to overcome the unfavorable conditions that constantly presented themselves.

During the summer we sent Mr. G. G. Publow to Great Britain to enquire into conditions there. He was enabled to follow the cheese from the hoop to the consumer and note any defects in our system of manufacture and methods of marketing. He had the opportunity of comparing the Old Country methods with our own. A full report will be presented to you by Mr. Publow of his observations.

During the eleven months ending November 30th, 1911, there were exported 1,659,261 boxes of cheese valued at $18,087,450.70 and 134,500 packages of butter valued at $1,732,360. This was an increase of $1,395,607, in butter over the whole year of 1910.

We should bear in mind that our export trade is only about 25 per cent. of our total dairy production. The home consumption of milk, butter and cheese is increasing every year enormously. The public are realizing more and more the value of milk and its products as a food.

The Dairy and Cold Storage Branch under the supervision of Dairy Commissioner, J. A. Ruddick, continues its active and good work in assisting the farmer, shipper, and consumer. Through the Cow Testing Associations the farmers are enabled to cull out their unprofitable cows, and thereby raise the average milk production of their herds without additional cost. The shipper is helped by the oversight that is given the daily products by the able staff of inspectors that look after the goods from the time they are placed on the cars at their factory until they are landed in the British market. The consumer is benefited by the goods landing in better condition. All, from the producer on the farm to the consumer in the Old Country share in the good work performed by this department. For successful competition with other countries in the foreign market it is necessary that the Canadian standard should be high.

During the month of December there was a conference of the leading dairy experts of the Dominion held in the City of Ottawa to consider matters of importance in connection with the dairy business. All of the Provinces were represented except British Columbia. Several important questions were discussed and a series of resolutions passed asking for legislation in the interest of the industry.

The thanks of the Association is extended to the Ministers of Agriculture for the Dominion and the Province of Ontario for the able assistance they have given the Dairy Industry of this Province.

ADDRESS.

SENATOR D. DERBYSHIRE, BROCKVILLE.

The Campbellford district is a good dairy section, and the dairymen have made marvellous advances in this locality. They have done remarkably well and are to be congratulated. We feel proud of the Brockville section because not only

the cheese manufacturers but the farmers have taken hold of the dairy business in a better way. They have not only provided more feed and plenty of silage for their cattle, but they have gone into the cow-testing a little more closely and have improved their stock. Although we have had complaints from other sections, I find that on the Brockville board there was a little better than three millions of dollars worth of cheese sold this year, the Brockville board being the second largest in Canada, not only in quantity of goods but also in the price. I like to be in a business that is going ahead. Nobody wants to belong to an institution that is going down hill. Everybody wants to be connected with a business that is reaching out and doing a little better from year to year; and while the Brockville section did a little better and made a finer cheese and got more money, we find that in the Dominion there were 68,727 less boxes of cheese made than there were in 1910, and we regret this very much. It should not be, and I believe if every section had done as well as we did, and had provided corn, and built silos, and had brought their cows through in proper condition, there would not have been that shrinkage in the quantity of goods that we exported. We feel that this matter ought to be looked into, and the time to do it is in the beginning of the year when we come together to consider this question and we should try and furnish a remedy. While we sold less cheese, we got more money for our goods in 1911 than we did in 1910, and a great deal more goods have been consumed in Canada than in any other year, and we are pleased to note that our home consumption is increasing. One thing in the President's address that I was pleased with was the reference to the holding of the district meetings where the selection of the representatives for the various districts was made. These meetings were really instructive.

Mr. Publow was sent to the old country, and he came home with a fresh vision of the business, and it seems to me that his addresses on his return were of more importance than any we have had from him before. Coming fresh from the old land where our goods are sold and consumed and being in touch with the people handling our goods, he secured the very best information in regard to our products. If we are wise we will make the style of goods that the consumer wants. I remember when the first order came for a deeply-colored cheese. I could not understand it, but I gave instructions to have one hundred of them made, and I followed them to Montreal because I thought they were spoilt. They looked red, and in my opinion they were no good. But I went to Montreal and had them examined, and I spoke to Mr. Ayer about it, and he said: "I would make them green if they would give me a penny a pound more." What he meant by that was that we should give the Englishman exactly what he wanted, and that is what we must do. We must make cheese to suit our customers, and they will give more money for them if we supply them with exactly what they want. By doing that we will be able to keep the business prospering, and the people on this side will stay in it, and the people of the old country will be glad to get our goods. In some sections of the country they are getting too proud to milk cows, but in Eastern Ontario the farmers are sticking at it, and are making more headway every year.

The district meetings are of great importance. They are held right where the people are, and the farmers come together and talk about what they can do to better conditions for the future. I look upon 1911 as a great year in connection with the dairy business, because the quality of the cheese has been better and our goods have gone to the British market in better condition, and we have got more money for everything we sold. The weakest point I can see in connection with the dairy business of Eastern Ontario is the question of food for the cattle. If we could

only get everyone growing corn, which is the cheapest food in the world and the best food for cattle, and get them to have some silos in which to put the corn, when the dry weather comes—and it comes every year—they will have this supply to tide them over when the pastures are short. I am satisfied that there is not enough corn grown in this section, and I regret to say that the farmers have not gone into the cow-testing as much as they should, so that they will be informed as to what their cows are doing.

Look at the Windsor Salt Company. What would you think of our friend Mr. Henderson? He is analyzing his products all the time and trying to produce a better quality of goods, and selling them at less money, so that he will have the finest goods on the market. We can learn a lesson from him in that regard. We know that two tons of silage is worth a ton of hay, and a ton of hay is worth $20, and it costs only two dollars to put the silage in the silo, and it will produce the best quality of milk and a large quantity of it.

Some improvement has been made in the butter trade. A larger quantity has been made. The shipments this year were 134,503 boxes, and that is an increase of 106,619 packages, and we got $1,365,645 more money for our butter than we got last year. That is a large step in advance, and a step in the right direction, and we hope we will do as well this present year. The shipments of cheese by the St. Lawrence route last year were $18,121,127. These are small figures, comparing them with the goods that were produced in the Dominion, when we think of the butter and cheese that is consumed in the large cities of Canada and the amount of cream and milk that is supplied to these cities by the dairymen of the Dominion. As near as we can figure out, the products of the dairymen in 1911 come to one hundred and five million dollars, an increase of nearly three million dollars over what it was the year before. I think that is a step in advance that we ought to feel proud of. But if we want to do better in the future we must commence at the farms and give them better tillage and underdrain the soil, and we must not be afraid to plow the land two or three times. After you have taken the grain off in the fall, plow the land light, then give it a deep plowing later on and disc harrow it in the spring, and you will kill your weeds, and get your crop in in the best way. You must grow larger crops in order to feed your cattle more. A great many farmers do not think of how much they can get the cattle to eat, but how they can tide them over the winter feeding them as little as possible, and then they expect the cow to get into condition in the spring and to produce a larger quantity of milk. It will take that cow a month to get started, and for two or three months she will give quite a quantity; then she starts to dry up, and men who keep cattle like that and feed them in that way think they are dairymen. Why don't they get down to the good practice and make a business of it, and produce a large quantity of milk? They will be able to get better prices every year if they improve the quality. The business is held back in the old country because some of the cheese is not what it should be, and when it is put on the table the people will nibble a little of it but they will not eat much. But where you supply them with a first class article, the consumption is twice as great.

I can remember when the consumption of butter in this country was not half as much as it is to-day, because it was highly salted and the flavor was not good, and you could smell it out-of-doors; but now when you get nice, clean, fresh butter it is eaten up rapidly and twice the quantity is consumed, and there would be more consumed at the present time if the quality was still further improved. My advice to the farmers is to send a large quantity of milk to the factory, of the best quality,

and then watch the factory and see that they give it proper attention. Everybody should try to make the factory better and larger, and see that it produces a finer quality of goods, and make this business something that you can really feel proud of. See that you have a cheesemaker, that has been at the Kingston Dairy School and thoroughly understands his business. I feel proud that in the Brockville district we have been able to do a great deal better than in former years. We have had a number of Holstein cattle in our district, and they are coming from all over the States to our section to buy first-class Holstein cows. Farmers are keeping better stables and are having better ventilation put in.

The water supply is getting to be an important matter in Ontario. In over half the factories the water is tainted, owing to some farms having barnyard wells, and they expect the cows to be healthy. It has been arranged that the water can be analyzed free of cost. Mr. Edward Kidd, M.P., and myself have arranged it so that it is done absolutely free. In the old country they are paying as high as six or seven cents more a pound for cheese that is of the finest quality, and I think a farmer who sends a poor article of milk to the factory should be docked.

We have had a remarkably good President during this year. His addresses throughout Eastern Ontario have been of great value, for he has given excellent advice. There is no use having speakers address the farmers and give them good advice unless they make an effort to improve. I paid a visit to our President last year. He has been talking so much about alfalfa hay that I thought I would see what he was doing, and when I arrived there I found alfalfa hay all over the farm. The hens and the pigs were eating it and everything looked beautiful. It would do you good to see the sort of a place he has, and how prosperous everything was looking; and I realized that having to live in the city I had to envy our President with all the luxuries surrounding him. If the city man could only get back on the farm it would be a great benefit. I have been preaching that in Brockville, until now we have two or three of our biggest men back on the farm, and they have most beautiful places with the finest cattle that are to be seen in Eastern Ontario. Their farms have been tile-drained, and everything put in up-to-date shape, and they are a credit to the district. Farms of this kind are a splendid example to the farmers in the surrounding districts, and we want things like that in every locality in Ontario.

I am delighted to have the pleasure of again being with you in Campbellford. I trust that this locality will make a step in advance greater than it has ever done before. The people of Ontario want a little of the Western spirit. You should notice the breezy way the members of Parliament from the West talk. I asked one of them how much money the farmers produced in their country, and after figuring it up he could not get more than a million dollars from all they had to sell; and right in the little town of Brockville three million dollars worth of cheese was sold, and the farmers have plenty of money all the year round. In some of these Western sections they never have a dollar until the wheat is sold in the fall, and I trust that during the year 1912 you will have more money than ever before.

THE PRESIDENT: I am sure you have been delighted with the address of Senator Derbyshire. He has given you a great deal of good advice. The Senator has not visited this section of the country as much as I have. He spoke of the fine Holsteins they have at Brockville, but if he went through this section he would find some fine Ayrshires, and the people here think the Ayrshires as fine as Holsteins.

COMMITTEES.

The following Committees were appointed:—

Nominating Committee.—Messrs. J. H. Singleton, Edward Kidd, G. A. Gillespie and Nelson Stone.

Resolutions.—Messrs. J. B. Wilson, C. W. Farley, J. F. McGregor, J. J. Payne, T. H. Thompson, and A. Scott.

Legislation.—Messrs. D. Derbyshire, J. R. Dargavel, Edward Kidd, G. G. Publow, and J. McGrath.

Business.—Messrs. Jas. Sanderson, W. H. Olmstead, C. Anderson, W. J. Johnston, and Neil Fraser.

BRIEF ADDRESSES.

JOHN H. SINGLETON: I can assure you that it affords me a great deal of pleasure to be here this morning in this beautiful manufacturing town of Campbellford. When we see your bright streets and beautiful buildings, it appears to me that it is an ideal place for a Dairymen's Association. You have magnificent water powers in the neighborhood of this town, and no doubt this district will be a great manufacturing centre in years to come.

I was pleased with the President's address, and I think we should adopt that portion of it which refers to the farmers providing more feed for the cattle during the dry weather. There is no way in which a farmer can make more money than by having a silo set apart for the dry hot weather. In places where this has been done it has been shown there is no part of the work on the farm that brings in so much ready cash as a little extra food given to the cow during the trying time through the summer. In Renfrew County we did not have any dry weather until the latter part of the season. We had luxuriant, green grass right through to September, and then we got into the dry time.

At the conference of experts in the dairy business held at Ottawa some time ago a great many things were talked over, and I am sure we will have a great many things to talk about at this convention. This year seems to have been a rather uneventful one, as we have not had any trouble in any place. Out West in November, when the stacks of grain were covered with snow, it looked like a time for worry; but the farmers out there said "We don't worry; we allow the other fellow to worry." We must all do our best to get the best results in every department of the work we are engaged in, and having done our best we should not worry. We have had nothing to worry about this year: we have had splendid prices all the way through and no trouble with the quality. I believe if we could get the night's milk cooled down to sixty-five degrees it would add wonderfully to the receipts during the year, and I hope this will be emphasized during this convention.

A. D. MCINTOSH: I represent more farmers than most of you, not from the standpoint of a politician nor as a social worker, but as a man who works among and for the farmers. Being district representative at Sterling for the County of Hastings, I am in close contact and in daily touch with the farming portions of that district. I have very much pleasure in being here to-day and in being asked by your chairman to take part in the discussion at this meeting. I was particularly pleased with the addresses this morning, and I would like to draw attention to one point that Senator Derbyshire emphasized: that we should have the farmers

here who do not treat their cows properly, or try to improve in their business. It is my pleasurable duty to get right next to these farmers daily, weekly, monthly and yearly, and I appeal to you to help your district representative in every way you possibly can. There are now twenty in the Province and others will be appointed the coming season. Having been connected directly with farming work, and born and brought up on the farm, and an old cheese-maker by trade, and having taught school a while, I feel that my contact with the farming community has been of such a kind as to warrant me in making the statement now as district representative that we cannot get too much help nor too much encouragement in getting right next to the right man who Senator Derbyshire wishes so much was here to-day.

It is all very well to get up and make speeches, but the most important thing is to get right alongside of the farmer and show him what he must do in order to make more money. I hope you will all do everything in your power to assist us in this direction.

NELSON STONE: As a director of this Association I was very much pleased with the addresses delivered by the President and Senator Derbyshire. I think Senator Derbyshire is somewhat ignorant as to the class of farmers we have in this district. While we are largely a dairying district, we are one of the largest fruit-growing counties in the Province of Ontario, and I would challenge Senator Derbyshire to compare Brockville District with Northumberland for fruit growing or general agriculture. We have in this district some of the best breeds of Ayrshire cattle to be found in the Province. We also have breeders of Holstein cattle who have first-class standing in the records of their herds. Within a few miles of Campbellford, we have a cow producing twenty-four thousand pounds of milk a year; but we have some men who are holding back and who are keeping back the men who are trying to do better.

MR. MCGREGOR: It is really a pleasure to me to be at this convention. The County of Glengarry is not noted for being progressive, but still we have a number of progressive men down there. Last year we had some fair sales of cattle, and some of them realized the magnificent sum of $13,000. These cattle were distributed from one corner of the Dominion to the other, and some were taken to the other side; and this summer Mr. Hunter, one of the greatest cattle breeders in the Dominion, who has held his own in Chicago and other places where he exhibited, had a sale at which he sold $18,000 worth of stock. Our people do not confine themselves to Holsteins and Ayrshires. We have breeders of Shorthorns and Herefords. Our farmers are doing away with the old state of affairs, and are making great headway. We want to have a meeting held in our district this winter. We need instruction. We want to reach these indifferent people, and it is hard work doing it. Some of them are a great detriment to the men who are trying to be progressive. Some of the men have only five or six hundred pounds of milk to send to the factory, and such an one is not at all particular how he takes care of it. The cheese maker sometimes refuses to take his milk, and this man says he does not care and sends it to another factory. The director of a factory where this was done said to the cheesemaker, "You had better take in that milk; if you turn that man away you will lose the profits." I believe the cheesemaker was justified in sending the milk home, because I believe half this poor milk finds its way to the whey tank, and by sending it home he would be able to make more cheese and cheese of a better quality.

A. H. WILSON: As your instructor for the County of Leeds, I attend as many

as possible of the annual meetings of the factories, and I have learned a great many lessons at these meetings. A short time ago at a meeting held at a cheese factory, the point referred to by Mr. McGregor was brought up. The factory referred to makes 152,000 pounds of cheese a year, and this year they were able to pay their people $21.90 a ton after paying the usual price of 1⅛c. for manufacturing. At that small factory they received three hundred dollars more than they would have received if the maker had taken as much milk to make a pound of cheese as he did the previous year. How was it brought about that he made a pound of cheese out of less milk? He returned a great deal of milk home the first part of the season, and in doing so he did not offend any of the patrons, but they said to him they were glad he sent it home. He educated them as to how to take care of their milk, and so they plainly thought they must do it. He said to them, "I want you to understand that if you want me to give you the best returns you must send me the best quality of milk." Mr. J. J. Lattan was the maker at that factory.

ADDRESS.

J. R. Dargavel, M.L.A., Elgin.

I did not expect to be called upon to say anything this morning. I came here to listen and to learn. I think it is a good thing to take stock of what we are doing, and also of what we have failed to do. We ought to enquire as to whether we have been doing what an association of this kind ought to do, and if we have failed in any place then we should try and find the weak spots. I do not wish to find fault, but I would like to say that I think there are opportunities for us to do a little more than we have been doing in the past.

As I understand it, the object of this Association is for the betterment of the dairy industry. I have been connected with the Association for twenty years, and I would say that every man I have known to be connected with the Association as a member of the Board of Directors, and every man who has acted as instructor, has honestly tried to do the best he could. I believe this Association has accomplished a great deal, although sometimes I feel discouraged at how slow the progress has been. But when I take stock of the conditions as they were twenty years or even as they were twelve years ago, or five years ago, then I see that we have been making progress.

Some few years ago at Belleville, I moved a resolution with the object of having our cheese factories licensed, but we did not get it accomplished for some years. We have practically got it now. The Department of Agriculture at Toronto was rather chary about introducing such a drastic measure. Governments are careful as to what they do; because no matter what they try to do if they happen to make a miss or get a little ahead of public opinion, they are criticized. The Hon. John Dryden, who was Minister at that time, and of whom I am always glad to speak well, because he was a grand man and did much to help the people of Canada (applause), could not accept that measure; but we got sanitary inspection, and now we have practically control of the factories and our instructors. With the consent of the Minister our head instructor can put any factory out of business for not carrying on the business as it ought to. The reason I moved the motion was because I saw the dairymen themselves were not doing their share, were not pro-

ducing the article they ought to produce, and were not keeping their stables in a sanitary condition, and I saw that there was no good in their producing a better article unless the factories were put in proper condition. I think we can congratulate ourselves upon the fact that the factories have improved their appliances very much. We now think it is time that our instructors should devote a little more attention to the farms where the milk is produced. I have heard Mr. Publow say time and again that this is the weak spot in our conditions to-day. We know that we are losing millions of dollars because all our milk is not as good as the best. There is no farmer who cannot produce milk in as good a condition as other farmers, and if we can save a million dollars by all of the farmers producing their milk in a proper condition, then we ought to try and do it. There is no use of our trying to get the farmers to produce a better quality of milk until we get the factories in better shape. The factories are now in better shape, and the instructors are now authorized to go to a factory and insist on proper conditions. I believe the instructors have worked well, and they have used considerable judgment in their work; but may I suggest that for the future they draw the lines a little tighter? We must get to the fountain head if we are going to produce better conditions; and I hope the Department of Agriculture will do all it can to assist us in that regard. Something has been said of the man who does not come to the meeting. We might also speak of the man who does come here year after year, and who receives plenty of advice and instruction and who doesn't improve as he should. Let us not point so much to the man who does not come, but let us take it to heart ourselves. I am a farmer, and I plead guilty that I have not done as well as I ought to have done. Let us all go home with the firm determination that each and every one of us will act as missionaries in helping our neighbors to be a little better than they have been.

THE CHAIRMAN: I am delighted to know that Mr. Dargavel feels strongly along the lines he has spoken of, because we certainly need some help along the lines of inspection. We have a number of inspectors, but we need more of them, and we need more money. At present the inspectors are handicapped, and I am pleased to know that Mr. Dargavel, who is in close touch with the powers that be, will try to get a little more money for dairy purposes. I know that Mr. Dargavel has done all that he could for us in the past, and we can do nothing better than back him up in his efforts. I am sure we can rely upon him to do his very best for the dairymen of Eastern Ontario.

RESOLUTIONS.

Moved by SENATOR DERBYSHIRE, seconded by J. R. DARGAVEL, M.L.A., and resolved: "That we, the Dairymen's Association of Eastern Ontario feel the great loss that we have sustained in the death of our past director, Mr. James Whitton. He was able and honest and beloved by all, and rendered valuable assistance to the Association during the twenty years that he so well represented this section on the Board of Directors. And that a copy of this resolution be sent to his widow and family." Carried.

Moved by Mr. KIDD, M.P., seconded by R. G. LEGGETT. "That we regret that our past President, Mr. M. K. Everts, who was always a good worker in the cause of the uplift of the Dairy business of the Province of Ontario, is retiring from the dairy business, and we wish him every happiness and God's blessing during the remaining years of his life." Carried.

CROP PRODUCTION.

J. H. Grisdale, Director, Experimental Farm, Ottawa.

I am very glad to be once more among the members of the Eastern Dairymen's Association. I am particularly glad to have the opportunity of visiting this part of the Province which has for so many years been talked of as a great dairying district. In the short trip from here to Peterboro, which I took by daylight, I was certainly impressed with the suitability of the district for dairying. The rolling hills and fertile little valleys and well watered farms, indicate wonderful possibilities in the dairying line. I congratulate you, the farmers of Campbellford and adjoining towns, upon living in such a promising and fertile part of the Dominion. I, of course, can say nothing against any other parts of the Dominion. I have visited many parts, amongst others, the far-famed Brockville district, and I must say that you are not the only lucky people in Canada. We have lots of good dairying country in Canada, but you are amongst the best.

The subject which has been assigned to me to-day, "Crop Production," is one which I am very pleased to have an opportunity of treating. It is a subject in which every farmer is interested, no matter what line of work he may follow or what use he may make of the produce of the farm. The crop production must be his first aim, and we are fortunate in living in a country where such a variety of crops of such excellent quality can be produced, from number one hard wheat down to the luscious strawberry. We can produce in Canada a variety and quality of crop which cannot be surpassed in any other country. Of course every farmer must produce crops suitable for the line of work he is in. Now, I take it that there is no use in discussing production of any other class of crops than such as are suitable for dairying to-day. We are all more or less interested in milk production and in the feeding of the dairy cow. I shall therefore confine my remarks to the production of crops suitable for the dairying industry, and since the production of any one crop would be sufficient for any address, you will understand that my remarks must be more or less general. If you are particularly interested in any one phase of the matter, I shall be glad to answer any questions. You will understand that to cover the subject at all one must treat it in a very general way. Let us consider what are the crops which we as farmers interested in the dairy industry must produce. You will all admit that we need, in the first place, some good grass land, some clover for hay, some grass for pasturage, some succulent feed such as roots or turnips or mangels for winter forage, and then some nitrogenous meal or grain to convert into meal to supplement these for other feeds. To this you may add a little bit of alfalfa or a little bit of roots to supplement the corn or a little variety in the grain. It seems a simple enough matter to grow these things. We all do grow them, we all have to grow them; but the point to consider is how can we grow them so cheaply, so luxuriantly, and in such large quantities as to permit of their being used with the greatest profit for milk production.

There is not a farmer in this Dominion who cannot grow crops even if he has never sown a crop. He can go out on a farm and by dint of ignorance and hard work he can grow some kind of a crop; but his hay may cost him $20 a ton, his corn may cost him $15 a ton, and probably his grain $50 a ton, if he counts in all the items. What we have to consider is how we can produce these crops, which we require at the very lowest possible figure, with the particular land we have. I do not mean that because you have a certain kind of land you must therefore try to

grow certain crops. But if you may think that in order to grow corn you must have a certain kind of land, and to grow clover another kind, such is not the case. With one or two slight exceptions, I am of the opinion, and my experience supports me in the opinion, that we can grow all the crops I have mentioned, that is clover, corn for ensilage, and oats—and there are no better crops for a farm—and these three crops can be grown on any land that lies out of doors in Canada. To reduce the cost there are certain lines of operation necessary. The first consideration the farmer must give is to so arrange his crops that he shall get the largest returns of any crop with the least effort for that particular crop. That is, he wants to arrange crops in such a succession that there will be the least labor and the best results in connection with that crop.

For instance, if a man arranges his crop in this way: Pasture, oats, corn, hay, he would have an arrangement of crops that you would admit would be ridiculous and highly unsatisfactory as well as expensive. If, however, he arranges his crops in this way: Clover or pasture, corn, grain seeded down, clover hay again and then pasture, he would have a grouping of crops which would give him most excellent returns and enable him to produce these crops at comparatively low cost. Putting it in one word, he must first decide upon a suitable rotation. Rotation and sane methods of cultivation, with good cultivation as well, will not only cheapen the cost of production but will very materially increase the crops. Our experiments over the last twelve years at the Experimental Farm at Ottawa, which has been under my direction for thirteen years now, indicate that we can, by following a good rotation, not only increase, but double, yes treble in some cases, the producing power of a given area of land.

To show you what can be done in the way of crops, let me give you our crop last year, 1910. According to the best statistics available—that is the report of the statistical monthly publication at Ottawa—the average production of the ordinary Canadian farm in 1910 was $15.50 an acre, and it cost to produce that $9.60 an acre, which means they had a net profit of about $6 an acre. On the Experimental Farm at Ottawa, growing exactly the same crops and charging the same prices for labor and valuing the crops at the same price as the farmers valued theirs, we grew over $43 worth of crops per acre. Now it cost us to produce them over $12 per acre, but you will see that while the average farmer had a net profit of about $6 we had a net profit of somewhere over $30, or between five and six times as much. The extra labor and the slightly increased cost of cultivation per acre gave us all that increase in return. I want to say that we did not use any commercial fertilizer. We did not buy any manure. We did nothing but what every farmer in the country can do. We bought a certain amount of bran, but we did nothing that any farmer could not do. That shows what can be done by the introduction of good rotation. The rotation I have mentioned as being suitable for dairying farms is a three years' rotation, provided he has enough land for pasturing his cows outside the arable land. I notice you have considerable broken land here. I know that is the case all over the Eastern counties—there is a very considerable proportion of our farms made up of land that cannot be worked to advantage. It has little corners or nooks. Here and there are rough areas too much covered with stone and in some cases overgrown with brush, which cannot be worked to advantage. This land, however, is just what is needed for pasture. It can be improved. Arable land is in many cases not pastured, or is only pastured to a very small extent in this eastern part of the Province. If a man's arable land is in such a quantity that he does not require to pasture any of

it, then if he would get the best returns for each dollar expended on it and if he would keep all the cows on his farm without care, I say to him follow the three years rotation.

First year, corn. Sow corn as early as you can. Sow a suitable variety. Sow it wide apart in the row and have the rows wide apart, at least three and a half feet or better still four feet and eight or ten inches apart in the rows. Then cultivate it well.

The next year sow to oats, or oats, peas and barley, but only a small amount of peas. You will probably get a better mixture of feed, and in some cases a larger yield. At Ottawa we do not find that a mixture of grains produces us quite as much feed as does the bare oats, but that is not the case all over. When you are sowing your grain, seed down. When I say "seeding down," I do not mean scatter a little bit of seed, but give it a seeding down. I have been criticized in the past year for recommending too heavy a seeding, and this year with the present price of clover and seed I suppose I will be doubly criticized; but in spite of that I still adhere to my past opinion, and my opinion on this subject is strengthened year by year as I see the results which we have and compare them with the results obtained by the farmers in other parts who do not sow in the same way as we do. I say, sow from six to eight pounds red clover, about two pounds alsike, from six to eight pounds alfalfa, and from six to eight pounds timothy per acre. That is something over twenty pounds of seed per acre, and at the present prices it amounts to quite a figure; but even at the present prices it is by far the cheapest method to seed. It is cheaper than using four or five pounds red clover and timothy per acre. The crop you get the next year will be infinitely greater. It is cheaper, for the reason that the crop you get will be of a very much superior quality, that is very much more readily eaten by the cattle. It is cheaper for the reason that the year's crop will give you ton for ton very much more milk, because it is much more easily digested. There are three reasons why it will pay you to sow a good large quantity of seed of the right kind, and these are the right kinds: red clover, alsike, alfalfa and timothy. We have tried every known combination, and that is the best combination that you can get. It will give you the biggest tonnage of the best quality and of the most easily digested variety than can be grown on Eastern farms to-day.

Q.—Does the alfalfa increase or decrease?

A.—In this three-year rotation we only leave it down one year. It sounds like a lot of seed for one year but it pays. The increase in tonnage will pay for it, the increase in digestibility will pay for it, your crop of grain is not all injured by this heavy seeding of grass, and if you cut it in good time it is not likely to injure your seeding. Then you have your crop and hay for the year afterwards, if you have average weather conditions. We have never failed to cut two crops, and we have never had less than three and a half tons, and we have gone as high as six tons per acre—that is off land that is not nearly as good as you have here.

If you must have your cattle pastured on part of your arable land, then all you have to do is to leave that grass land down one year longer and you have a four years' rotation. There is a rotation that will suit almost any farmer who is ambitious to reduce the cost of crop production and to increase the cattle carrying capacity of his farm. It will produce more roughage of a better quality and better suited for his purpose than any other rotation I know of. When he has not to pasture then the three-year rotation is best. If you wish to make your farm absolutely self-sustaining, and do not wish to buy any feed in addition to the grain

you grow on your farm, then there are rotations which will suit your purpose better than the three or four-year rotation

Here is a rotation we have tried for twelve years with satisfactory results. I do not mean that we have used it on an acre or two, but we have tried it on a two hundred-acre farm. Therefore I know what I am talking about. The first year, pasture early in the fall, that is, in the month of August. We plow that pasture with a shallow furrow, work it down and work it at intervals for the rest of the season. Plow again in October, if you are provided with the necessary instrument, a double mould board plow. We ridge it up, and it is more satisfactory to handle the next spring and conserves the fertility better. Ridge it up as though you were prepared for sowing potatoes, and leave it that way during the winter. The next spring work it down and sow peas and oats. If, with these peas and oats we sow a small quantity of clover we have found it will pay us. I will not say every year you will be satisfied, because some years the summer is so dry that the growth of clover is very small. The next year you turn that land into corn. I said a bad rotation was one where corn followed grain, but in this case it is peas and oats, and you will notice that I recommend clover to be sown with it. I think every farmer should always do it, but do not always expect good results; nine out of ten times you will be satisfied.

The second year you have corn and the third year you have grain seeded down as I said before. Six or eight pounds of red clover, two pounds alsike, six or eight pounds alfalfa and six or eight pounds timothy. These quantities are as low as you can get them to be sure of the best returns and to give the most satisfactory results.

Q.—Do you sow your seed before the drill or behind?

A.—In front of the drill. When we have alfalfa to sow it is sometimes difficult to sow all the seed; alfalfa is a large seed. Twenty odd pounds is just about as much as any seeder will handle. Where the grain is very loose, a good plan is not to sow more than one-half of it. If we sow twenty-two or twenty-three pounds of seed to the acre, we put one-half in seeder and take the other half and sow it crossways by hand or run the seeder the other way. We usually do it by hand, because we have a man that can sow it twenty feet wide with a little hand seeder.

The five-year rotation has given us very satisfactory results, and enables us to grow quite enough grain for the average requirement of the farm. I said that in order to lower the cost of production the first step was the introduction of a proper rotation, and you will ask why. The answer is, first, because it facilitates the operation of a farm; it is always easier to sow grain after corn than it is to sow it on newly plowed land. It is easier to prepare sod for corn than it is to prepare it for any other crop, for the reason that it gives you more time to work it. You want to put your grain on the ground that is ready to receive it soonest; and I know of no ground that is as near ready for the grain crop in the spring as corn land. I know of no ground that is better prepared for the grain crop than corn land. It has a good solid foundation and a solid seed bed, and at the same time it is in good condition for drainage, and it is ready early in the spring. It has also the manure in it in just such a state of decomposition and disintegration as fits it best for the requirements of the tiny grains of grass seed. It is in every way in ideal condition for growing grain. The corn comes in just where it gets what suits it—abundance of coarse feed in the way of rotten manure and decaying grass roots—and has received that pulverizing which enables the roots to go into the soil and get more food from the sub-soil and

more or less moisture. It is, in fact, in ideal condition for the corn, and the following of such a short rotation adds materially to the fertility of the land, and I do not hesitate to say that you would increase the crop-producing capacity of your soil by anywhere from fifty to one hundred per cent. in six years. That may sound exaggerated, but it is borne out by our experiments at Ottawa. It is also corroborated by the experiments of the Agriculturist at Guelph and it has been proven by my own experience on a farm which I owned in the Province of Quebec. It has also been the experience of many farmers who, in the past, I have been able to persuade to adopt similar rotations. The introduction of a rotation in which clover enters at least two out of three years is the first step to success in farming.

Q.—When do you apply manure?

A.—During the winter.

Q.—On what crop?

A.—To the corn always. We never apply it to grain. We never apply it to hay. It might be applied to the hay if a man had a long rotation.

Q.—Do you apply it before you plow the land for corn?

A.—I prefer to apply it after plowing, but if it is very strawy it is hard to handle: we find it gathers in the harrows and prevents the easy handling of the land.

If a man has decided upon the crops to grow, and the rotation to follow, the next thing is how to do the work. If he follows the rotation he will in a short time become impressed with the importance of having his farm either divided into large fields, or grouped with all the fields that are in one group in one part of his farm and the fields in another group in another part of the farm. I notice that your farms here are rather badly cut up by dale, hill, waterways and roadways, and I was sorry to note that there were very few square fields between here and Peterboro. In many cases I saw fields evidently belonging to the same farmer that were two, three, five or six acres, and some of these fields divided lengthwise by a huge ditch, on each side of which was weeds or grass. There is no necessity for these ditches. If you must have an open ditch let me give you a pointer on how to get rid of the ditch and have it at the same time. For ten years I wrestled with that question on a certain field we had, and I closed up the ditch, and opened it, and closed it up again, and tried under-draining: but I found we had to have a ditch to take the surface water away, because it would lie there so long in the spring after a rain, and this is what I did: We had a field of forty acres, and it was divided by a ditch, and it is not convenient to jump a three-foot ditch with the seeder. We dug that ditch to the depth necessary, and then we started and each year for three or four years when the crops were suitable we hollowed away the ditch so that starting at the ditch we crowded it back about fifty feet and it made no appreciable difference in the appearance. Where the subsoil had been exposed we brought a little back. We had about three hundred yards to do like that and we kept track of the cost, and it cost us for labor at odd times, when the men would not have been doing anything quite as valuable, $100 for three hundred yards, so you see the expense was not very great and now that field never has any water winter or summer, it all runs away in that ditch. We have a ditch and we have no ditch. We can work right through it and grow corn right through it, and in the bottom of that ditch we had corn last year and it was just as good a crop as anywhere else. I saw a smaller field about ten miles from here where a farmer had a big ditch across the field of about sixteen acres, and it was divided into about ten acres on one side and six on the other, and it was a triangular field. By adopt-

ing the method I have just described he could have that in one field. Do away with all these little bits of fields. There is no longer any necessity for having three or four cows here and four over there, a little patch here and another yonder. Get your farms into as large fields as you can. A large field will pay for the labor of bringing a number of small fields into large fields in one year. It concentrates your work and saves you going around with your tools from one field to another and it enables you to use larger machines. When you have got your farm into large fields, and are following the right rotation, you will wonder why you did not do it before. I know you are not doing it, because I see thousands of farms every year where it has not been done. I suppose there is not a farmer in this audience to-day but does not know what good rotation is, and what the best rotations are; but I am just as confident that there is not more than about 10 per cent. of the farmers that are following a good rotation. We know, but we do not do. That is the evil that Mr. Dargavel mentioned that we are more to blame for—coming here and knowing these things and not doing them. We must get busy and do these things. They can be done at no extra cost, because the crop for one year will pay for almost any change I have mentioned. If you follow out what I have stated you may find it necessary to add to your implements or replace some of the old implements and if you do so get a big one. I have been following that up for a good many years. When I started experimental work some years ago, the cry was then, as it is now, the everlasting increase in cost of labor. Wages are high and the name of the hired man is None. That has been going on ever since, only I suppose the question is slightly more acute than it was ten or twelve years ago. We really have difficulty in finding hired men. We can get over that; we can get hired men if we pay enough. If a man won't come for $20 a month maybe he will come for $25 or $30, and if you can not get a man for $30 you can get them for a higher figure. The floating population goes where wages are the highest. We find that the laboring man does not do enough to pay for the wages we have to give him. If you knew that you could pay a man $50 a month and he could earn you $100 you would hire him at once. The reason we do not hire our men at better wages is the fact that we do not know how to employ them to advantage. We put a hired man behind a scrawny old team with a single furrow plow, and put him into a stony field, and he does about fifty cents worth of work during the day; whereas he should have been behind a good, strong team with a two furrow plow and a good long furrow, and he would do $10 worth a day. It is not the hired man's fault that he does not earn his wages. It is the farmer's fault. Once we get our fields large enough that we can use larger implements, then we will be able to make the hired man earn his money, and I do not know a hired man that is not better pleased at the end of the day if he finds he has plowed three acres than if he comes home and says he has only plowed one acre. He is just as keen to do the work as you are provided he has the tools and advantages which will permit him to do it. The two-furrow plow will cut the cost of plowing in half if you give the man the right kind of horses. A man with a single walking plow and two small horses can do only so much plowing in a day. Supposing a man can do one and a half acres with a single walking plow and two small horses, I am very sure that with three good, heavy horses such as every farmer ought to have he could do three acres with a two-furrow plow, and it will cost him only half as much per acre. If plowing an acre with a single plow cost two dollars, I believe that with a two-furrow plow it will cost only one. That is our experience at Ottawa. If we use a steam plow or traction engine it is cheaper still. I do not say that it is advisable for the ordi-

nary farmer to try that. but we find we can plow the land for less than $1 an acre by gasoline or steam. Every farmer ought to have a two-furrow plow.

When you get the land plowed the next thing is to disc harrow it. I suppose every farmer has a disc harrow. It has undergone a revolution in its construction. The average disc harrow of twenty years ago was a little bit of a thing with twelve or fourteen discs that joggled along on top of the ground and we thought it was doing fine work. The disc harrow we have to-day is as much superior to the common old disc harrow as the first disc harrow was to the stiff tooth harrow of twenty years ago. We have disc harrows to-day that will cut the cost of cultivation in half. We have large disc harrows for three horses and four horses. It costs us to prepare the land ready for the seeder ninety cents an acre with a small disc harrow, seventy cents an acre for the three-horse disc harrow, and forty-five cents an acre with the big disc harrow, double cutaway. It costs a very little more than the common disc harrow. If there are holes or stony portions it will miss little spots; but the double cutaway disc harrow works satisfactory, and will do the work in half the time that a single disc harrow will and it will do a better job. How many times have we seen a farmer walking behind an eight or ten-foot harrow, and a good team in front, when he might as well have been walking behind twenty feet. There is not even the excuse of uneven ground because the harrow undulates. Of course that is objectionable in a small field. Then again we should use big harvesting implements as well as big seeding implements. Up to three years ago we used at Ottawa a twelve-point marker for the seeder. Three years ago we introduced the twenty-point marker, which does just about twice as much as the twelve-point. We used to be able to sow ten acres with one man and two horses, now we sow twenty acres with one man and three horses, and do the job just as well. In the last twelve years, by the introduction of large machinery, we have reduced the whole cost of farming operations by nearly one-half. We have cut off at least forty per cent., and at the same time we have increased the returns from these fields by one hundred per cent.

Now, don't these look like big figures? They are startling, but you can apply them on your own farm in this county to-day. Is it not worth while considering that by a gradual introduction of a few changes which will cost him practically nothing more, he can bring the income of a farm from $1,000 up to fifteen hundred or sixteen hundred dollars, and do the work at less cost? These are considerations which are worthy every farmer's attention, and I am giving you facts that I am ready to stand by and prove if you like to come down and see our farm. Since I have become Director I have persuaded the powers that be to allow us to build an auditorium or pavilion which will accommodate seven or eight hundred people, and if you come down there, no matter in what weather, we can accommodate you and treat you like gentlemen. We also have a small hall down there in which you can hold a convention, and we will be only too delighted to have you with us, and will give you the hall free and will do everything we can to make you feel that it is your farm. We would like you to come down in the summer and see what we are doing. Go and see the hired man and he will be sure to tell you the truth about the boss. The facts are as I have given them to you. We can show you the crop, we can show you the cattle. We have a two hundred-acre farm and one hundred and fifty head of cattle on it to-day and fifteen horses, and two hundred pigs and we are not buying any roughage. We are growing it all on that two hundred-acre farm, the roots, the ensilage and the hay but not, of course, all the meal; we buy bran and oil-cake meal. We have grown all the hay, ensilage, and roots necessary

to feed all that stock, to say nothing of fifty sheep, and that is what can be done by intensive cultivation. The figures I have given you as to the cost of cultivating an acre are exactly correct. That is what it costs us, and we pay our men sixteen cents an hour. We charge $3 an acre for rent and $3 for manure, and these are all included in the figures I have given you.

I strongly advise you to get a large mower, a large binder and a larger horse rake. Start with the double-furrow plow and a big disc harrow, a wide walking harrow, a wide seeder, a wide mower, a wide-cut binder and a wide horse rake.

Q.—A hay loader?

A.—We have two and I will sell them cheap. Get one if you like them. We have not used ours for four years. We gave them a thorough trial, and I will admit that where a man is alone or where he has only a small amount of help, a hay loader may be useful; but we can take men from other departments and do the work quicker by hand, and it is much more to our liking. The trouble is you have a good big team on the wagon and a man in front to drive and two on the load to move that hay. Our hay crops are heavy. On the first crop we get from three to four tons, and we use a side delivery rake, and by the time we get to the end of the row these two men wish the hay loader was somewhere where it would burn quickly. I have followed them along and cheered them on but that did not affect the condition of their temperature when they got to the end of the row. The side-delivery rake is a first-class machine. We have a tedder, but we very seldom use it. We leave the hay lying as it comes from the mower for a few hours, then the side-delivery rake comes along and turns it up and what was the bottom is the top, and we leave that a little longer, and then go along with a side-delivery rake and cock it right over, so that your hay is turned over and is dry. We find it is not quite as good as cocking it, but it is better than a tedder or common horse rake. We use the common horse rake for gathering up the rakings after we have hauled in the hay.

Q.—Is that all done in one day?

A.—If you cut your hay on Tuesday, just as soon as the dew is off, next morning about ten o'clock you can go along with your side-delivery rake and then about two o'clock you can go along again and cant it over, and it is ready to go in in the evening unless you have three tons to the acre; and then you may have to leave it in windrow another night. It depends on the wind and the weather.

Q.—Some people draw it in as soon as it is cut?

A.—They may be able to do it, but I cannot. We have tried it; we have tried our friend Glendinning's plan, and we have had poor hay always.

Q.—If it takes you until evening to get it ready, how do you get it in before the next day?

A.—I said at two o'clock. If you have it cut the day before, then at two o'clock you turn it over and start to haul it in. If you have such a large field that you would take all day to haul it in you can't do it in that way. We usually cut so much each day, and try to handle it in such a way as to get it in between three and six next day. Each farmer would have to handle the crop according to his own requirements. Sometimes we cock it, and that makes the best hay, but it is a little more expensive.

Q.—Do you plow the corn ground?

A.—No, we use the disc harrow in the fall and in the spring we disc it again and sow it. We find it does not pay to plow it, it pays better just to disc it. The grain requires a good solid seed bed.

Q.—Would you expect the corn to get ripe?

A.—We grow it entirely for ensilage. We grow fifty acres a year all for ensilage.

Senator Derbyshire: I noticed that in Scotland they put the hay in small cocks for a couple of days and then put three cocks into one, and then three of these larger ones into another cock, and keep on increasing.

Mr. Grisdale: They have such an abominable climate that they have to resort to these methods to get it cured at all. I have known them to have it out three months. The climate is very bad for haying, and their methods are entirely different from ours. I believe the varieties of corn that you ought to grow here are, Leaming, White Cap, and Yellow Dent. We have found them to be very satisfactory at Ottawa, and they would be even better here, because I know your climate is slightly more favorable for corn production. Our average crop this year—and this was only an average year—was sixteen tons to the acre. We do grow as much as twenty and twenty-one tons. We have had twenty tons on the average, but sixteen tons is a pretty good crop. We had no rain from the middle of July to the 10th of September.

Q.—How far apart do you put the drills for corn?

A.—Three and a half to four feet. Sometimes three and a half, but I think four feet is better. If you have very strong land and a very favorable season, three and a half will give you a bigger crop. About one-quarter of our corn last year was in hills; it did not give us as much yield, but the quality was slightly better. We can plant it more cheaply with the horse planter.

Q.—How do you cultivate your corn?

A.—There is a machine I omitted to mention. If you sow the corn in hills you can cultivate more cheaply and evenly, but if you sow it in rows it is less expensive to sow and a little easier to harvest. You can cultivate it by a little walking cultivator, or you can get one of these riding cultivators that straddle the row. As to our treatment of the corn crop, we give our corn a good cultivation after each rain, and if it does not rain we cultivate it once a week anyway. That is the best plan that I know of for fighting the drouth. The one difficulty we have in Ontario is the dry weather, and the key to that is cultivation, and, the following of a rotation such as I have described is a good way to conserve the moisture.

The best thing to do after plowing is to roll it, and the heavier your roller the better. Then after rolling it, go over it two or three times with a disc harrow, and then roll it again, and if you do that you are practically sure to have very little trouble from lack of moisture that year.

Q.—Do you plow the sod in the spring or the fall?

A.—As early as we can in the spring. I have no objection to plowing in the fall, but if you plow in the fall plow a little deeper.

Q.—How do you apply the manure in the winter time?

A.—If the land is plowed we apply it right on top if there is not more than a foot of snow. If there is a lot of snow we put it in small piles. We use a spreader in the fall, and it is one of the best machines ever invented for the farmer, and it enables him to get more out of his manure than in any other way.

Q.—Do you apply nitro-culture to your seed?

A.—We do not use it; we have been growing clover for years. I would suggest that you go to some of your friends who have fields of alfalfa and buy or borrow a bag of soil. If you are willing to pay the freight we will ship it to you.

Q.—How many hundred pounds to the acre?

A.—From one hundred to one hundred and fifty. Just after plowing it harrow the land and plow just the same as grass seed.

THE CHAIRMAN: I have found it difficult to get a man who can sow by hand, and we throw a lot of soil in the waggon box and set a small drygoods box in the waggon and we drive across the field and the man stands behind and throws, and this is the easiest way to spread the soil.

Q.—The first crop of alfalfa is hard to cure, and provided it was put in the silo and there was not enough to fill it, would it be all right to let that stand and fill it up with corn later on?

A.—Certainly.

Q.—Will that make good ensilage?

A.—Alfalfa will make good ensilage, and if you are careful after you put it all in, to level the silo well and pack it very tightly around the edge and put a few pailfuls of water on the surface it will keep splendidly. If your alfalfa is very green a little water on the surface will do.

Q.—Would you cover it with chaff?

A.—You would save the alfalfa and lose the chaff.

Q.—Would you cut the alfalfa?

A.—Yes, it will keep whole, but it won't keep as well. When it is cut and put into the silo I do not know of a better feed. You will lose in weight, and probably in feeding value. If you put one hundred tons of alfalfa into a silo you will only get out about seventy or seventy-five tons. I do not know what becomes of it. I have tried it year after year and we have found we always lose a very large proportion, and if the alfalfa you put in the silo shows about twenty per cent. dry matter, the alfalfa you take out will show ten or fifteen per cent. more.

Q.—Do you find the same loss in corn ensilage?

A.—Nearly the same, but not quite. Good corn ensilage has twenty to twenty-five per cent. dry matter, and you will lose out of one hundred tons probably fifteen tons. We weighed ensilage out of the silo where we had it. We have weighed all kinds of ensilage and we have the figures of each kind.

Q.—Did you ever put sweet corn in a silo?

A.—Yes, it gives too small a crop. We can never get more than ten or eleven tons, but a ton is worth a good deal more than the ordinary corn.

Q.—What is your experience of blight in alfalfa?

A.—We have not had that difficulty except when we first started to grow it.

TILE DRAINING.

PROF. W. H. DAY, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

The relation between drainage and dairying is not far to seek. Dairying, like all other phases of agriculture, is based upon the soil, and perhaps there is no other soil property that exercises such a great influence on the profits in agriculture as the water content of the soil. The food supply might be most abundant but if the water supply is excessive or deficient poor results are sure to follow. Drainage, either natural or artificial, will remedy the defect, so that by drainage the dairyman is able to get better results from his labor and is able, with the same amount of

labor and capital, to produce greater crops for the support of the herds which produce his dairy products.

I want to first show you what drainage will do; secondly, how it will do it, and thirdly how to do the drainage.

Without further introductory remarks we will exhibit the slides. We have here a field of corn that will run something about one hundred and seventy-five bushels to the acre in the year. The next slide shows you another field on the same farm which also looks a good crop, and Mr. J. A. Fletcher, who sent me these photographs, says that his farm, which grew these crops, was practically a mud pond before he bought it. Many of you are aware, that during the past five or six years the Ontario Agricultural College has been conducting what we call a drainage campaign. It was first announced in 1905. The actual survey and educational work was begun in 1906, and from then to 1908 we surveyed a considerable number of farms though we had no reports from these farms as to the percentage of work they had done or the results; but in 1909 when I saw the survey work was increasing, and that we could not carry it on with the assistance we had, I set out to get reports from the farmers for whom we had made surveys in the Province three previous seasons, and I asked them to send me samples of the grain which grew on the drained and undrained land.

I will now show you a few slides showing the plants from the drained and undrained land. You see this plant over four feet in height, which was grown on the drained land, and that other one, only two and a half feet, was grown on the same kind of land, undrained. These plants came from Elgin County. As a matter of fact that farmer obtained twice as much straw from the drained land, and he had thirty bushels of wheat per acre from the drained land and only fifteen from the undrained. He tells me that it cost him $17.50 per acre to drain that land, and wheat was sold at about $1 a bushel, so that he more than paid for his drainage from that one crop.

The next slide is corn which shows a marked difference between the drained and undrained land. The next slide shows barley from drained and undrained. These samples were sent by Mr. John A. McMahon, of Petrolia, and he had fifteen bushels more of barley from the drained than from the undrained. Next is a sample of oats sent in from Mr. McIntaggert from the north part of Ontario near Beaverton. These oats grew on high loamy land that he considers the very best land. He had fifty acres of that high, rolling land and he had fifty acres of low flat clay. I made a survey of that fifty acres, and these oats are from the heavy clay land. He was a man who did things. Immediately after he had his survey he put in twenty-five acres of drains that autumn, and the next year put in the rest of it, and he had nineteen bushels more per acre and about twice the straw from his low, flat clay than he had from the high loamy land, and he was able to put it in about a month before he was able to sow the high land. The next view is a sample of Goose wheat showing a marked difference, and he had twenty bushels more of barley from the drained land than from the undrained and twice the amount of straw. Peter W. Scott, of Huron County, sent me three samples of peas. He found he had ten bushels more peas from the drained than from the undrained. I found after tabulating a number of reports that the increase runs about $23 an acre on the average. It does not mean that every acre gave $23 of an increase. The increase ranged from $11 up to something over $40, but, taking the average, it gave an increase of about $23, and we will say the average cost per acre for draining is about $25. Many of you know that you can do drainage for

less than $25 an acre. You may ask where are you going to find capital to put $25 an acre into drainage. Some years ago the Government made provision for cases like that. Away back in 1887 they passed an Act called the Tile, Stone and Drainage Act, which authorized the township to lend money to farmers who applied for it to drain their land, charge them 4 per cent interest, and give them twenty years to return that payment. Supposing you borrow $100, the annual payment for twenty years is $7.36, and if we take $25 as the price of drainage then you can drain four acres and the annual payment is $7.36 or $1.84 per acre, and you get an average of $20. If there are any financial men in the audience I would like to ask them if they would not consider a proposition like that a very safe way in which to invest money. I believe it is the very best and safest investment the farmer has before him to-day.

Here is a sample of peach tree grown on very heavy clay land, and if you go to Mr. James Marshall on the mountain south of Hamilton you will see between 3,500 and 4,000 peach trees growing on land as heavy as any clay land in Eastern Ontario. Under-drainage makes clay land good peach land.

The next slide will show you how lack of drainage acts on peach trees. These small peach trees were planted at the same time as the others. How does it double the crop? In the first place it enables you to get upon your land from one to six weeks earlier in the spring than on land that is not drained. Under-drainage has a very marked effect on the physical nature of the soil. There is a great deal of air in the soil, and the under-drainage loosens up the soil and makes it more porous. Certain very fine elements of soil are carried away by drainage. These are the elements which make the soil too sticky, and they are carried away. Consequently there is more air in the soil and the roots are better ventilated. Ventilation of the roots is just as essential as the ventilation of the plant above ground. I brought in two samples of soil from the field after it got dry. I weighed up one pound and then I weighed up the other. I put one into a tub and packed it, and I put the other pound in another tub and did not pack it. I then saturated both of them with water and let them drain, and I found that last tub retained 28 per cent. more water than the compact one did. If the under-draining makes the soil more porous, then that more porous soil is going to retain more water and consequently when the drained soil is ready to work it contains more water than the undrained soil when it is ready to work. There may be a month of difference; the drained land may be ready to work the 1st April, and the undrained lot not until the 1st May. If we compare them on 1st April, we will find the undrained has most water, but if we compare them when they are ready to sow, the drained has really more water in it. The rainfall at Guelph is about twelve inches on the average during the growing season and the amount of water necessary for plants is from eighteen to twenty-four inches water. It takes that much for wheat, oats, peas, barley and so on. The rainfall during April, May, June, July and August is twelve inches. Of course, some is lost in the run off and that would probably reduce it to about nine inches. That means that nine inches of available water falls during the growing season and it requires eighteen to twenty-four inches to mature your crops. Where are the crops going to get the eighteen to tweny-four inches? They must get it from water that is stored in the soil from the fall and the spring rain. Therefore, it is a very important factor to have your soil in such condition that it will absorb and retain more water. The drained soil will get rid of the excess early in the spring, but at the same time it has a greater store of water in it during July when nearly all the water evaporates. Of that eighteen to tweny-four inches I suppose

fully one-half is lost by evaporation during the summer. The water in the soil rises up by a process known as capillarity. Now, drained soil being more porous will bring up more water and feed the roots more plentifully than the undrained soil, even though there may not be the same amount of water, as capillary action is slower in undrained soil. There is more root space in drained soil and the roots can get down, and when the drouth comes the roots are further down and the water does not have to come so far to get to them. The drained soil is warmer in early spring than the undrained soil.

The heat that comes from the sun is used in three ways. First by evaporating water. Evaporation uses up heat. Some experiments have shown that the evaporation that takes place on the 21st June uses up fully one-half the heat that comes from the sun on that day. The same is true in April. If one-half the heat from the sun is used in evaporating water it cannot go to heat the soil, and if we can check that evaporation it is a great benefit. As soon as we make the soil dry on the surface, evaporation is checked, and the drained land is dry on the surface from three to four weeks earlier than the undrained. Thus the evaporation is cut off earlier in the spring on the drained land, and we get the soil warmer in the spring, and as there is not so much heat lost there is more to penetrate the soil and heat the seed bed. Consequently, we get the soil from five to twelve degrees warmer in the spring time. Many seeds will not germinate in the cold soil. Wheat will germinate the best in about 68 degrees; corn germinates best at about 90 degrees. Let us suppose that a man decides drainage is worth while, what is his first problem? It is to decide just how he is going to do it. In years gone by a very great deal of drainage has been done by the eye and the fall of the water method, but we believe there are methods in advance of this, and we advise a man that whenever he has decided to under-drain to possess himself of a method whereby he can tell what fall he is to have. This slide shows a home-made drainage level, and I will have pleasure in sending a full description to any person who would like to make one. The under-drainage should be about three feet. I have on this slide five cans and each one of these cans has a drainage tube right in the bottom. In one we have a three-inch drainage and in another a six-inch drainage, and in the other three, one foot, two feet and three feet, and this shows you how the other tobacco plants look when the one with three feet drainage is in bloom. As soon as we get the soil in these cans we fill with water and let the water drain out as far as we can. We have a gauge glass, and we can tell where the water was standing, and we add a little water from time to time and keep the water just at the proper depth.

The size of the tile is a very important factor. Could we know the depth and the distance apart and the amount of fall then we could tell what sort of tile to use. Of course we never advise anything less than three-inch tile for the small drain. For the main drains you have to consider the amount of cross drains and the fall.

Q.—Can you dig a ditch cheaper by machinery than by hand?

A.—No; they charge the same price.

Q.—Did you ever have experience with a machine drawn by horses?

A.—No. Years ago we had a Rennie machine drawn by horses. We tried one when we were draining the Jordan Harbor Fruit Farm, and it was discarded by Mr. Peart.

Q.—It had been used a great deal in the eastern part of the Province?

A.—It is not being used in the West, and there are several up there that can be bought cheaply. I do not think it would pay the farmer to buy one of these

ditchers for his own work; but for a good mechanic or a man that has had some experience to take hold of it and operate it as a financial proposition, the same as a threshing machine is operated, I think it would be all right.

Q.—About how many rods would he dig a day where it is comparatively free from stones?

A.—Our experience is it doesn't average as high as seventy-five rods. The first year, the one I am interested in did about twenty-five miles the whole season. This year I think we did about fifty-five miles; some days it has done as much as one hundred and seventy rods.

Q.—What is the price per rod?

A.—They are charging 34c. a rod and the farmer furnishes the fuel. This work is growing rapidly, and we are beginning to see the benefits of it. I am asking the Minister of Agriculture to furnish me with fully double the money I had during the past year to continue this drainage work, and I have no doubt there are some of you who would be willing to lend a helping hand in seeing that the money is forthcoming. The best way to fill the drain after the tile is laid is to take a side hill plough and run it in in that way.

Q.—What is your opinion of cement tile?

A.—I think the solid cement tile will make good.

ADDRESSES OF WELCOME.

Ex-Mayor W. J. Doxsee: I am sure it is a great pleasure for me to welcome you to the town of Campbellford. You have noticed a sign outside the door, "The best town in the Dominion of Canada." That is due to the fact that the farmers in the surrounding country are prosperous. This is a farming centre, and I am glad to say we have some of the best farms and the most up-to-date farmers that you will find any place in the country. We are glad to see you, and I hope it will not be long till we have the pleasure of seeing you again. Some years ago butter was brought into the town in almost any shape—in fact, you did not know whether it was safe to buy it or not—but that is not so to-day. We have the most beautiful butter sold in Campbellford.

Reeve J. Irwin: It affords me much pleasure to add my voice to welcome you to our town, because it is an honor to the town to have an association of this kind meet here. I hope while you are at Campbellford you will see the advantages of our town, and carry away with you pleasant memories of what you see. I hope you will try and visit our power house, and the different powers, and that you will realize that we are a great centre of power, one that is second only to Niagara in the Dominion of Canada.

I welcome you to our town because we are a dairy centre, and in coming here you are recognizing the fact that we are an important dairy centre. In looking up some facts along that line, I find that there are twenty-six cheese factories boarding their cheese on the Campbellford Board, and that they have an output of about $12,000 per month, making $150,000 per year. This seems to me to be a very good condition of affairs, and represents a large amount of business. I think it would be better if there were not quite so many cheese factories and the same

output. If we had larger factories and better equipped and managed so that the expenses would be cut down they would be able to pay more profit to the farmers. I am not a farmer nor was I born on the farm. I was born in Campbellford, and that was good enough for me; but I have been out on the farms and I know something of the routine of the farm work, and I know that the farmers must have the greatest returns possible for their labor or they will not be sufficiently paid for their work. Our Board in Campbellford is ahead of other Boards in selling cheese. The Cheese Board of Campbellford have a rule that the cheese should sell on the Board, it is paid for upon delivery at the station, and the town market weights are final. I most heartily welcome you to the town of Campbellford.

The Chairman (Senator Derbyshire): I assure Mr. Doxsee and Reeve J. Irwin that the Eastern Dairymen's Association appreciate most fully their cordial welcome, and we shall always have a kindly remembrance for the town of Campbellford, and the very auspicious reception we have received here to-day.

Mayor Owen: It is a very great pleasure indeed for me to be present with you to-night, and I am delighted to see so many ladies here, and I know the Hon. Senator Derbyshire is delighted to see them too. I always believe that when we have the ladies on our side that 75 per cent. of the battle is won.

I remember the Dairymen's Association of Eastern Ontario met here in 1895. Many of you who are present to-night were present then. We are just as glad to see you now as we were in 1895. The dairy industry of Canada is a great one. Some years ago the idea prevailed that any man could farm, and some have the idea to-day, but there is where they make a great mistake. As I drive through the country and see the number of scrub cattle that are kept, I am surprised that in these progressive times any man should keep poor cattle. I think the Dominion Government should do more for the farmers than they are doing.

I think the paltry sum of $750,000 a year that the Dominion Government have been voting for agriculture should be increased, and they should give four or five million in the interest of agriculture. For every dollar they are now spending on agriculture they are spending fifteen for militia and defence, and these are times of peace. Both political parties are to blame. The Year Book cost $10,000 a year to print, and that is charged to the farmer, and they give more than $50,000 annually to the Toronto Exhibition and that is charged to the farmer. The cost of the census is charged against agriculture, and when you sift out all these, there is not more than three-quarters of a million expended for the benefit of the farmer. When the farmer is prosperous the storekeeper is prosperous, everybody is prosperous. The farmer is the bone and sinew of the country. The only market we have for exports is the old country. In this country we have been endowed with many advantages. Look at what we have on the River Trent between Peterboro and the town of Trenton. We have something like 80,000 horsepower, almost all of it going to waste, and we are now going to have it developed and city after city will spring up along the Trent River.

THE OUTLOOK FOR BUTTER AND CHEESE MAKING INDUSTRIES.

J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa.

I have been attending meetings of the Eastern Ontario Dairymen's Association pretty regularly: since 1882 I have only missed one or two of your annual conventions. I am glad to come and see the old friends that I do not meet except at

these conventions. There is just one little note of sadness at this gathering because I miss one of the dairymen that I remember in connection with this Association, our old friend James Whitton. He was always on hand, and deserves to be remembered by the dairymen of Eastern Ontario. James Whitton and Howard Bissell were the two first Canadians ever employed as dairy instructors, and they did their work so well that it was never thought necessary afterwards to go outside of Canada for instructors. Previous to that we had gone to the United States. I shall miss Mr. Whitton, and I am sure those of you who had the pleasure of his acquaintance will be sorry that he is no longer able to be with us.

It will be impossible to deal with this subject intelligently at this time without repeating some of the arguments and illustrations which I have used on former occasions. Most of the figures which I shall give you, however, are new, even if the form in which they are presented may be familiar to some of the members of this Association.

It would seem to be worth while for someone to take the trouble to collect the statistics of the international trade in dairy products, so far as they may be of interest to Canadian dairymen, and to study the tendencies of production and home consumption in those countries whose trade is large enough to be a factor in the world's markets. In these days of improved transportation with trade routes established, which bring the ends of the earth together, it is absolutely necessary that we should know what is being done in other countries, if we are to determine with any degree of accuracy as to the best policy for the future of the industry in Canada.

The Season of 1911.

The season of 1911 was notable for the extremely hot, dry weather which prevailed in Great Britain and on the continent of Europe, causing a great shortage in the milk supply. The output of cheese and butter in the United Kingdom was much reduced, and the imports from France and the Netherlands, two important sources of supply, fell off over one-half. The extreme heat and dry weather also caused a heavy shrinkage in milk production in some parts of Canada. This general shortage, following an unexpected decrease in New Zealand cheese shipments for the season of 1910-11, resulted in an active market which raised cheese prices in Canada to the highest point ever reached in the history of the trade. The situation was modified to some extent by an increase in the exports of cheese from the United States to Great Britain—an item in the international trade in cheese which for some years has been so small as to be almost negligible. Indeed, it was generally believed that the United States had reached the point when it would be necessary to import cheese and butter to supplement the home production. The judgment of those who took that view of the situation underwent a sudden revision with the realization that the stocks on hand were far in excess of the local consumptive demand at the prevailing prices, and there followed a phenomenal slump in the price of butter and cheese in the United States market in the early months of 1911. The losses were enormous, and forced sales sent large quantities of butter and cheese from the United States to Great Britain. The timidity which naturally followed such a disaster depressed the cheese market during the early part of the season to an export basis, with the result that over 16,000,000 pounds of cheese were exported from the United States to the United Kingdom during the eleven months ending November 30th. Stocks of both butter and cheese are now comparatively light in the United States, and there has already been a sharp ad-

vance in prices, which are again too high for the export trade. The period of low prices has undoubtedly increased the home trade, and it is altogether likely that the quantity exported next year will be very much smaller than it was in 1911.

The Statistical Position.

The outlook for the dairying industry in Canada should be clearer to us if we first consider briefly a few statistics bearing on the international dairy trade during the past year. Taking up our own export trade first, we find that in addition to satisfying the increasing home demand, the quantities of different products exported, if reduced to a common basis, are practically the same for the twelve months ending Nov. 30th, 1911, and for the same period in 1910, while the values for 1911 show a substantial gain over the preceding year. This is a fairly good showing, considering the unfavorable weather conditions.

There has been some decrease in cheese and cream shipments with a corresponding increase in the exports of butter.

Owing to the low prices in the United States, the exports of cream have been much less than they were in 1910, but with normal conditions again prevailing, the demand of that country for cream may easily reach, or even exceed, its former proportions.

Table I.—Showing the Total Exports of Dairy Produce from Canada for Twelve Months Ending November 30th, 1910 and 1911.
(Trade and Navigation Returns.)

	Quantities.		Values.	
	1911.	1910.	1911.	1910.
	Lbs.	Lbs.	$	$
Cheese	168,256,026	182,893,660	21,208,567	20,920,172
Butter	9,753,386	3,736,369	2,089,828	863,846
Casein	1,172,268		41,299	
Condensed Milk	6,209,162	7,655,939	440,438	452,760
Milk (fresh)	291,250		2,285	
	Gallons.	Gallons.		
Cream	1,073,765	1,651,972	934,550	1,594,758
	—	—	24,716,967	23,831,536

The total value of our exports have shown an annual increase for the past three years, and for the year ending Nov. 30th last, it is under $7.000,000 less than it was for the record year of 1903. Against this decrease we have the increase in home consumption, which is at least $25,000,000 a year more now than it was in 1903. This would leave a net increase of over $18.000,000 in the annual production. It is said that the number of milch cows is less in Ontario than it was a few years ago. That may be so, but there has been a very great improvement in the average yield of milk, and I believe that there is more milk now being produced in Ontario than ever before. This is due, in part at least, to the Cow Testing Movement.

Some Australasian Figures.

As it is from Australasia—that is to say, from Australia and New Zealand—that we may expect to meet the only increasing competition in the immediate

future, it will not be out of place to look at the record of the importations of butter and cheese into the United Kingdom from that part of the world during the past ten years. If our Australasian cousins are to so far forget their relations to the other parts of the Empire as to offer us any serious competition in supplying the Mother Country with butter and cheese, it would be well for us to take a note of it and be guided accordingly.

TABLE II.—SHOWING THE IMPORTS OF BUTTER INTO THE UNITED KINGDOM FROM AUSTRALASIA (AUSTRALIA AND NEW ZEALAND) FOR YEARS ENDING JUNE 30TH.
(Weddel's Review.)

Year.	Imports.	Increase.	Decrease
	Tons.	Tons.	Tons.
1903	10,628	.....	.....
1904	35,491	24,763	.....
1905	39,035	3,544	.....
1906	42,127	3,092	.....
1907	48,875	6,648	.....
1908	33,888	.....	14,987
1909	29,811	.....	4,077
1910	45,475	15,664	.....
1911	60,247	14,772	.....

Note.—One ton = 2,240 lbs.

About 75 per cent., or to be exact, 44,395 tons of butter came from Australia in 1911, as against only 1,053 tons in 1903.

TABLE III.—SHOWING THE IMPORTS OF CHEESE INTO THE UNITED KINGDOM FROM AUSTRALASIA (AUSTRALIA AND NEW ZEALAND) FOR YEARS ENDING JUNE 30TH.
(Weddel's Review.)

Year.	Imports.	Increase.	Decrease.
	Tons.	Tons.	Tons.
1902	2,710	.....	.....
1903	2,617	.....	93
1904	4,128	1,511	.....
1905	4,072	.....	56
1906	5,870	1,798	.....
1907	8,757	2,887	.....
1908	13,205	4,448	.....
1909	16,572	6,367	.....
1910	22,857	6,285	.....
1911	20,873	.....	1,984

NOTE.—One ton=2,240 lbs.

Practically the whole of the cheese comes from New Zealand, Australia having sent only 1,055 tons during the whole ten years covered by the table.

It will be interesting now to compare the quantities of cheese imported during the last ten years from Canada and New Zealand.

TABLE IV.—IMPORTS OF CANADIAN AND NEW ZEALAND CHEESE INTO THE UNITED KINGDOM COMPARED. YEARS ENDING JUNE 30TH.
(Weddel's Review.)

Year.	Canadian	New Zealand.
	Tons.	Tons.
1902	76,297	2,710
1903	87,883	2,617
1904	98,306	4,111
1905	92,308	4,072
1906	95,884	5,870
1907	90,679	8,597
1908	81,428	13,152
1909	76,402	16,572
1910	79,661	22,651
1911	76,457	20,256

Decrease Canadian since 1904-1910, 18,645 tons.
Increase New Zealand since 1904-1910, 18,540 tons.
Note.—One ton = 2,240 lbs.

It is rather remarkable that the increase in the New Zealand shipments should tally so closely with the decrease of those from Canada, but let me here repeat that the New Zealand increase accounts in no way for the Canadian decrease—quite the reverse. If we had continued to export as much as we did in 1904, while the price might have been somewhat lower, there would have been little or no increase from New Zealand. The milk would simply have been converted into butter in that country.

As it appears to me, the most significant item in the preceding tables is the remarkable increase in the shipments of butter from Australia. It is of more importance, on account of the greater volume, than the increase in the cheese shipments from New Zealand, although the latter have naturally attracted far more attention in the cheese trade. It makes very little difference in the end whether a country exports butter or cheese. It is the total production of milk which counts.

PROBABILITIES OF AN INCREASED SUPPLY FROM AUSTRALASIA.

It is too early to form a correct estimate of the probable output of the New Zealand cheese factories for the season of 1911-12, as the first of the season's shipments are only beginning to arrive in Great Britain. The New Zealand spring, which may be said to begin in August or September, has been favorable, but weather conditions are always uncertain in that country. Stormy, backward weather often prevails late into the summer after a month or so of fine weather. Private advices from New Zealand show a small increase in the first shipments of the new season's cheese, but it is more than offset by a decrease in butter shipments. The first shipments of butter from Australia also show a decline as compared with 1910. Just here let me say that notwithstanding these ups and downs in the Australasian shipments, I believe that that part of the world is destined, in the not very distant future, to take the first place in the international trade in dairy products; or in other words, that the combined exports of butter and cheese from Australia and New Zealand will exceed in value, before many years, the exports from any other country. As a matter of fact, Australia alone now ranks next to Denmark among butter exporting countries to-day. At the present rate of

increase Australia's exports will exceed those of Denmark in a few years. Dairying is the most profitable branch of agriculture in New Zealand, and as new country is opened up, the settlers now taking up dairying whereas in the past, the tendency was to engage in sheep raising. Many of the large sheep "runs" are being cut up into smaller allotments for dairy farming. There are large areas yet to be cleared and brought under pasture.

In Australia also the conditions have changed greatly in favor of dairying of late years. It was considered at one time that much of the country was too hot for the successful manufacture of butter and cheese, but with the aid of mechanical refrigeration, the dairying industry is being pushed rapidly north, even into sub-tropical Queensland.

It was also thought at one time that the cattle tick would be a permanent menace to dairying in many parts of Australia, but that difficulty has been largely overcome, and the tick is now well under control. As in New Zealand, there are large territories still unoccupied which will eventually support a great number of cattle.

Steady Population in Australasia.

The slow growth of population in Australasia, has a very important bearing on the export of dairy produce from these countries. Agricultural production is increasing more rapidly than home consumption, so that a large proportion of the increase is available for export. This is a very important point in connection with the probable export from any country. We have seen the effect of a large increase in population on the export trade of Canada during recent years. In our case, it has been all the more marked, as a large proportion of the new population is engaged in a branch of agriculture which does not include dairying.

The mild winters of New Zealand are in one sense favorable to milk production. There is a very short period during the year when the cattle do not get sufficient nourishment from pasture alone. There is this to be said, however, that as the cows do fairly well in favorable seasons, the farmers take the chances of carrying them through every year without making provision for the months when the pastures are sometimes very bare and the weather inclement. When a bad season occurs the cattle suffer very much. It is reported that during the past winter, a large number of cows have starved to death in New Zealand. Winters in Australia are milder and drier. The thing most dreaded by Australians is the occurrence of drouths, which have sometimems lasted for several years, with most disastrous results. It is claimed, however, that with the application of dry farming methods and the securing of artesian water, future droughts will not prove as serious as they have in the past.

Total Imports of Butter and Cheese into the United Kingdom, Year Ending November 30th, 1911.

The total quantity of cheese imported annually into the United Kingdom has varied up and down during the past ten years, but, on the whole, there has been a downward tendency. The imports for the year ending November 30th, 1911, were the smallest since 1908, and amounted to 110,709 long tons. If we take into account this decrease in the imports along with the big shortage in the production in England and Scotland on account of the prolonged drouths last summer, it would seem as though the statistical position of cheese was very strong for the

coming season. The United Kingdom is, next to the United States, the largest producer of cheese in the world. The home production exceeds the total importation by many thousands of tons, and, therefore, a small per centum of shrinkage amounts to a large quantity in the aggregate.

The imports of butter, on the other hand, have increased as much or more than the decrease in cheese if both were reduced to their equivalents in milk.

It may be of interest to state that the annual importation of butter into the United Kingdom is from 200,000 to 220,000 long tons.

The imports of cheese and butter from European countries, as far as the United Kingdom is concerned, show very little change from year to year. These older countries have about reached their limits of production. The one exception is Siberia, but the German demand, which is growing rapidly, absorbs a larger quantity of Siberian butter every year, and thus the volume of that which reaches the United Kingdom has not shown any increase during the past three or four years. Germany was an exporter of dairy products less than ten years ago, but now a large quantity is imported. This is the result of a decreasing emigration, and a great industrial expansion. The population is not only growing, but the condition of the working classes has greatly improved of late years, and large numbers who never ate butter at one time are now able to indulge themselves to that extent. This is the reason, no doubt, why the German market takes so much inferior butter.

The Home Trade.

Canada's home consumption of dairy produce, it is needless to say, continues to increase, but few people seem to realize the extent of this increase. The increase must be over $2,000,000 every year, including milk and all its products. This means that our home market absorbs probably $25,000,000 more of the dairy production than it did ten years ago. The total home trade, including milk, cannot be far from $80,000,000 a year, and, therefore, it is much the most important market that we have.

So much for what may be called the statistical side of our subject. Now let us see if the tendencies which have been referred to and the figures which have been quoted shed any light on

The Outlook for the Cheese and Butter Making Industries in Canada.

In the first place, we have seen that the United Kingdom continues to absorb an increasing quantity of dairy produce, and that Germany is becoming every year a larger buyer of these articles of food from other countries. The home market in Canada is expanding with the increase of population, and from all appearances, the United States will soon be an importer instead of an exporter.

The greatly improved quality of all butter which has followed the application of skill and scientific methods in its manufacture, results in it being spread more thickly than it formerly was, and as this occurs at practically every table in the land, the total increase of consumption on that account is very large.

The most outstanding feature of the dairy trade at the present moment is the growing demand for milk for the larger towns and cities. It is quite as noticeable in Canada as elsewhere. Winnipeg is now obliged to obtain a large quantiy of milk daily from such a distant point as St. Paul, Minn. The demand in Vancouver is closing many of the creameries in the Fraser Valley. The same thing is occurring in other parts of the country.

The increased per capita consumption of milk and cream is very large not only in Canada, but in all countries where these articles are included in the daily dietary of the people. The improved sanitary conditions surrounding the production and distribution of market milk have given a great stimulus to its use, and there is still much to be accomplished in that direction.

The only countries which are likely to increase their exports to any considerable extent are Australia, New Zealand and possibly Siberia, but there is no reason to believe that the increased supplies from these countries will exceed the growing demand for dairy produce.

The conditions which have been outlined give no indication of an over-production of butter or cheese during the next few years at any rate, and there would appear to be at the same time a fair promise of good prices. On the whole, the outlook for dairying in Canada is as good, if not better, than it ever was, and it seems to be particularly bright for the coming season.

How New Zealand Competition Affects the Canadian Trade.

Before I close, there is one other phase of the dairy situation in Canada which I desire to again refer to. I would again draw attention to the change which is coming over the Canadian cheese trade as a result of the increased supply from New Zealand. As the New Zealand season is exactly the opposite to that of the Northern Hemisphere, their cheese begins to arrive in England a little after the close of the manufacturing season in Canada. Under these conditions, the New Zealand cheese supplies to some extent the demand which formerly existed for Canadian cheese during the winter months, so there is not now the necessity to store as much summer-made Canadian cheese for winter use as there formerly was.

The point I wish to emphasize is this. When the quantity of New Zealand cheese becomes large enough to supply the consumptive demand during the time it comes on the market, say from November to June, Canadian cheese will have to be consumed very largely during the period in which it is produced. The effect of this is already felt to a limited extent. Our cheese are needed more than ever for immediate consumption. That being the case, they should be well cured before we put them on the market. They should be more mature now than was necessary under the old conditions when they were held much longer in storage.

I need not point out to Canadian cheesemakers that our practice in this respect for several years past has been exactly the reverse of what it should have been. I am not going into the question as to who is to be blamed for the shipping of green uncured cheese. Possibly the buyer and the seller may both be to blame, but admitting that there may be two parties to the act, and that the cheese producer may shift part of the responsibility on to the buyer, it is he, the producer, and he only who must face the results, and bear the inevitable loss. It must be conceded also that he has the remedy in his own hands. Here is what one of the leading importers says on this subject in a recent interview:

There is one thing, however, that might be done to make Canadian cheese more suitable to our trade during the months of June to September, and that is, to delay shipping them until they are more mature. During these months, they arrive in far too "green" a condition, and this, of course, depreciates their value. The reason for shipping them so early is easily understood; but there is no doubt whatever that the makers have to pay a penalty by realizing lower prices than they otherwise would. A glance at the Chart of Prices * * * will show that in July, August, and September prices for New Zealand cheese in London are always above those obtainable for Canadian, while for the remainder of the year Canadian makes more money that New Zealand. The sole cause of difference in the two articles during these three months is the immaturity of the Canadian.

The difference in price referred to was from ½ cent to ¾ cent per pound. This is a direct loss, serious enough in itself, but the loss of reputation is even more serious. The saving in shrinkage, which is supposed to be made by shipping green cheese is a paltry matter compared with the injury done. Moreover, the gain through saving of shrinkage is an imaginary one, because the cheese continue to shrink no matter who holds them and the loss eventually comes out of the producer.

The New Zealand cheese cannot be placed on the market in the same green condition that much of the Canadian cheese is. Time and distance stand in the way, for it takes at least two months to transfer New Zealand cheese from producer to consumer, and more often it is nearer three months.

I would like to add that New Zealand cheese is practically all cool-cured, and that it is carried on its long voyage from the Antipodes at a proper curing temperature. It has the further advantage of being landed in cold weather. The natural advantages are undoubtedly on the side of New Zealand, but Canadian cheese factories have been shown very plainly how they may by adopting the cool curing principle, meet this competition on even terms, and that too without the expenditure of a cent which will not be repaid inside of two years. Mr. President, I cannot conceive of a more suicidal policy than to continue to ship these green immature cheese which gave so much dissatisfaction to our customers. We are spending thousands of dollars annually to bring the art of cheese manufacture to the highest possible pitch of perfection, and then we nullify the good results which should and would follow if we allowed sufficient time for the full development of those high qualities which the skill of the cheesemaker has put into his product. A good reputation for quality of product is essential in these days in any line of production, and he who neglects it will go to the wall sooner or later.

Mr. Dargavel: I would like to ask Mr. Ruddick if he has ever thought out any regulations for the prevention of shipping so much immature cheese.

Mr. Ruddick: No. It never seemed to me to be a question that could be dealt with in that way. I think it would be to the general advantage of the country. The trouble would be in determining the age of the cheese. You would have to fix some arbitrary limit. One cheese would be equally as ready to ship in six weeks as another one would be in two months.

The Chairman: Now I have very great pleasure in introducing Dr. Publow, one of our old instructors but who is now in the medical profession.

TAKING THE BULL BY THE HORNS.

Dr. C. A. Publow, Picton.

I am delighted, as most speakers are, to be with you at the 1912 meeting of the Dairymen's Association of Eastern Ontario. My work is somewhat varied, and it is pretty hard to make things to suit everybody, and I have arrived here under some difficulties, and am perhaps not in the best form. I was up all night, and this morning removed a man's appendix, attended an annual meeting of the cheese factory this forenoon, and came seventy-five miles to take "The Bull by the Horns."

I have been for nearly seventeen years directly interested in dairy work, and it seems pretty hard to get away from it even though I am connected with the medical profession. About ten years ago I managed to secure fifty cents from

some person and went to have my hand read by a palmist who was then visiting the little town I lived in at that time. She told me I would make a good doctor, but never to leave the business I was in. It looks as if she was right, and I have been inclined to believe in palmists ever since. The expression "Taking the Bull by the Horns" is more or less a common one, and is used in every day life by most of us, and it simply means a way of getting after a hard proposition. Probably the greatest propositions there are to handle in connection with the dairy work are those that develop from a business standpoint, and I have been more directly interested in dairying from a business standpoint during the last year. At the Convention at Perth last year I had an address that I spent a great deal of time on, showing how money was being lost in the dairy industry. I do not know whether any dairyman throughout the eastern part of the Province has seen fit to try out any of these figures or not to see whether they were true. They were the results of experimental problems in the United States while over there. This last year I had the privilege of spending some of my spare time in managing a cheese factory. I took the management of one of the poorest factories in Prince Edward County with the idea of building it up if possible. It had always less money per one hundred pounds milk than any other factory in the district. We put in a graduate from the dairy school, one who had not a great deal of experience, who was willing to follow instructions. At their annual meeting to-day the secretary reports that they had paid the patrons this year just a few dollars under $800 more for the same amount of milk as the highest price paid by the best factory in the neighborhood. In other words, by the application of a few ordinary keen business methods to the ordinary work of the factory the same factory has received just about $800 more than the neighboring factories. That is one of the practical benefits that have been derived from real, keen business work. It is surprising the lack of keen business that is shown in factory management. There is a great deal of looseness all along the line, from the beginning until the cheese are placed on the market, including the sending of the cheese in such a green condition.

Some little time ago I was calling upon a man who had been injured by a dairy cow, and he was interested in having the cows increase the milk supply yearly. Amongst other cows, he had one cow that gave nearly 10,000 pounds in a year, but once a week she would let fly and knock the pail over and spill all the milk. After a while neighbor came along and bought the cow, and he found after he had put on kicking straps and weighed the milk, that she was giving in the neighborhood of 12,000 pounds in the year. If the other man had put kicking straps on he would have saved a good deal of milk.

I was more or less interested while on the American side to see the wonderful ability for business shown by some individuals in the farming world. If you go to an auction sale of dairy cattle in a great many sections, and a black and white cow is put up that will give about three thousand pounds of milk a year, and a red one that will give twice the amount that the black and white one will, the black and white one will sell for two or three times as much as the other because she is black and white, and that is about as far as the business ability of some will go. I attended an auction sale in New York where black and white cows that would not pay for their keep were sold for $80 a piece, and other cows of another color giving two or three times the amount of milk, could hardly get a bid. At the State Fair at Syracuse, we had judging contests and prizes were given for the best judging done by young or old. Two cows were brought in, both black and white, and it was found that the first prize was to go to a young country

boy who was not over fifteen years of age and he had competed against some of the better judges. When the prizes were awarded the judges asked the young fellow how it was he was able to tell the better of these cows and how he knew it was that cow that should have the first prize. "Well," he said, "we used to own one of those cows, and if the other cow does not give any more milk than she does, she is a darned poor cow, and that is how I knew she ought to get the first prize." (Laughter). That is a good deal along the line of the business that is being done in a great many of our dairy sections.

Another very important proposition that is before the dairymen of Ontario is that of the milk supply. The cheese and butter industry is not the only important part of the dairy industry in Canada by any means. You have learned from Mr. Ruddick's report that milk is being carried for five hundred miles into the City of Winnipeg. In Eastern Ontario, you have about twenty-five instructors who are trying to improve the quality of the milk that goes into the cheese. It is surprising to find the small number of persons who are trying to improve the supply of milk to the towns and cities. That is a field that is open for the greatest amount of improvement work for the future. In recent years the rising generation has retrograded to such an extent that a very large percentage of all the individuals born are fed on cows' milk given in some form or other. Another important fact is that about 90 per cent. of all the children who die under the age of one year (and about 80 per cent of all those who die, die under one year) die from impurities in the milk supply. If you care to figure that out you will get a pretty fair idea as to whether the population of the Dominion is increasing, and also you will learn of the surprising loss both in sorrow to families and to the commercial world as well, because a great many of these individuals if properly cared for, undoubtedly would grow up to be men who would be of great service to the country. We are doing a great deal to improve the horses, the pigs, the sheep and the hens, and the best sires are brought in from foreign countries so that the best possible stock can be produced. That is all very good in itself, and is something to be commended; but have you ever stopped to think what we are doing to improve the human race. There has practically nothing been done. Everything is allowed to go on just in the same old way as it has been for the past fifty or one hundred years. Even individuals in our own homes, and a great many in the homes of people who are supposed to be well educated, take milk from the dairyman at five cents a quart that smells of the stable before he sticks it in the door. They feed that to the young infant, and no wonder it dies in a couple of weeks' time after they have started to feed it on such milk. I do not know that the dairyman is to blame; the man who is peddling the milk around does not know the difference between a typhoid germ or a bed bug unless a bug got on him and bit him a few times, but it is a fact that there is 75 per cent. of all milk delivered to all our homes that is entirely unfit for consumption for young infants; and over 60 per cent. of all infants born are being fed on cows' milk so they certainly do not get a very appetizing meal and it is no wonder that they cry and keep their fathers up all night when they are fed on such food as that. The most pronounced thing I have noticed in some milk is the strong stable flavor that is in the milk, and that is due to unclean conditions in the stable and conditions that could be remedied very easily. The plan that is followed in some of the large places is to have an inspector go to the barns and see that they are kept in a sanitary condition. He has a square card that he uses and this is handed to the newspapers once a month and the people of the town are made aware of any unclean conditions and in that way the quality of the milk is improved very

much. The great danger in the feeding of the milk to infants comes from the bacteria germs which it contains. We have often seen milk carried around in a waggon with a dipper hanging up in the inside of the waggon and on a dusty day it will be covered with dust and it is dipped into the can and the milk transferred to the jug, then the mother in the home will take the jug in and let it stand on the table and probably a fly will drop in and carry in material on its feet, or perhaps a little drop of milk from the day previous will be left in the jug and that will act as a starter and put all the milk off. The mothers are entirely innocent of all offence. They are not aware of the danger that lurks in the milk if it is improperly cared for. When you consider that 80 per cent. of these children die in one year from impurities in the milk supply it is certainly time that more is being done, and we should all do our best to have such a state of affairs remedied.

In connection with the health of animals we have the important problem of the pasteurizing of whey. You all know very well that whey is sent back to the farmers to feed to their young pigs, and very often to their young calves. Supposing there is in the herd belonging to the patron one or two tubercular cows, that milk is mixed up with the rest and goes into the whey tank, and tubercular germs are mixed with the whey and some of that goes back to the patron, and that is an A1 manner of spreading the tubercular disease. We have not given the same attention to the tubercular problem in Canada as they have on the other side, but we undoubtedly will as we appreciate conditions that exist in this respect. It is well known that by heating the whey to a reasonably high temperature all these germs are destroyed, and all danger is absolutely eliminated of transmitting the disease. It is also known that by pasteurizing the whey the feeding value is increased at least 20 per cent., while in spite of this it is a difficult thing to get a great many to see clearly the benefits of spending a few cents to have the whey pasteurized.

One of the big problems we have is that in connection with our home market. We are putting up practically one style of cheese. We need to put up a variety of cheese that will suit the home market, but it seems to be the policy of most factories to put their ordinary export cheese on the Canadian market where a much softer and milder flavored cheese would be preferred. I think the cheese should be put up in the most attractive form so that it would be sold on our own market. It is really surprising as we come to these conventions from year to year to see the small number of really new things that we get out each year. In Eastern Ontario we have one thousand men making cheese, and with all the instructors and the number who are making experiments and investigations, still how few really new things we get from year to year. Not because the work does not offer tremendous fields for investigations of one kind or another; last year at the Convention it was arranged to have a number do certain work in recommending some means whereby the milk would be paid for on a better basis. There seems to be a great difficulty in doing that. Probably if we wait long enough we will get some of these things.

These are things that appeal to me as being of particular interest to the dairy work at the present time, and if we will only take hold of the proposition—not so much the new things but the things that we know—and if we will put them into effect, we will have a different dairy industry at the end of 1912 than we had in 1911.

REPORT OF DAIRY INSTRUCTOR AND SANITARY INSPECTOR.

G. G. Publow, Kingston.

I take pleasure in submitting my ninth annual report as Chief Dairy Instructor and Sanitary Inspector in Eastern Ontario for the season of 1911.

The same number of instructors were engaged for the work as last season, viz., 24, and there were but two changes in the staff, Mr. Barker replacing Mr. Graham in Vankleek Hill district and Mr. McAllister being appointed to the vacancy in Plantaganet section caused by the death of Mr. Charbonneau.

Before commencing the season's work, the instructors were again given a short preparatory course of instruction at the Kingston Dairy School, where lectures and demonstrations were given in the different branches of the work, and this has proven a very important factor in the adoption of uniform methods throughout the different districts.

To still further familiarize the different instructors with uniform methods, and the more modern equipment of the better factories, a travelling conference of ten of the instructors from the districts where no cool-curing rooms exist, was held in Prince Edward and Hastings counties. These instructors met me at Belleville, and together with representatives of this Association, visits were made to a number of the better factories and dairies in these sections. No better object lesson has been given these men than that secured on this trip by comparing the conditions found with those in their own districts, and much good has already come from it.

Visits to Factories.

There were in operation this year 913 cheese factories, which is 20 less than last season. This reduction is due to the fact that 11 factories were closed, generally to amalgamate with neighboring factories, seven were burned, and two were operated as creameries. These factories received from their regular instructors 1,432 full day visits and 5,124 call visits. In addition, they received 450 visits from Mr. Singleton and myself, making a total of 7,006 visits in all.

During the past year there were 10 new factories built and 527 made improvements in buildings or plant, the estimated expenditure, including new buildings, being $101,150, and I might say here that as a result of the large expenditure for improvements each year, the great majority of the factories now in operation are well equipped for the manufacture of cheese, as far as being equipped with suitable machinery is concerned. They are still weak, however, in curing room facilities as, only 44 are so constructed that a uniform temperature can be maintained throughout the different months of the year.

The number of patrons delivering milk to the cheese factories was 33,107, which is 221 fewer than in 1910. Of this number 3,167 were personally visited by the instructors for the purpose of improving the quality of the milk supply. This feature of the work is deserving of more attention than we have been able to devote to it, owing to the assistance required by the makers. In nearly every case where a patron's milk was being received out of condition, and his farm was visited and inspected by the instructors, an immediate improvement in the quality of the milk was noted. Another result of these visits to the farms was, that 1,253 stables were whitewashed and otherwise put in a sanitary condition during the season.

The number of cows from which milk for cheese-making was obtained was 307,598, which is 12,369 less than last season. The average yield of milk per cow, from May 1st to Oct. 31st, was 3,406 lbs., this being an increase of 153 lbs. per cow, for the same period last year. This I consider a good increase considering the nature of the season.

An interesting point in this connection is the fact that 830 new silos were built during the year, and as a result the production of winter milk will undoubtedly be increased sufficiently to materially add to the records of the individual cows for the full year. The average percentage of fat in the milk was 3.65 as compared with 3.64 last season.

The total number of pounds of cheese made from May 1st to Oct. 31st, was 93,634,568 lbs., which is 3,618,839 lbs. short of the output of last season, or, allowthe average weight of a cheese to be 80 lbs., there was a decreased output of cheese to the extent of 45,230 boxes, for the same period last year.

The number of factories pasteurizing the whey was 123, and the average acidity of the whey was .37 per cent. as compared with 1.06 per cent. in the unpasteurized. The number of factories making whey butter was 127, and the total amount manufactured from May 1, to Oct. 31, was 358,855 lbs.

The number of factories shipping cream or casein to the United States was 14 as compared with 41 last year, the decrease being due almost entirely to the high prices paid for cheese over the comparative prices available for butter.

The number of samples of milk tested for adulteration was 29,098, and of this number 91 were found to be deteriorated. Of this number 65 were prosecuted and paid fines totaling $2,048.76. It is gratifying to note in comparing these figures with those of last year that there has been a decrease of over 33 per cent. in the number of cases of adulteration. Should this improvement keep up it would be only three years until there would be no such cases to report. Such a condition should be a real possibility as this year nine of the 24 districts had no cases to report.

We have also conducted a series of tests of the casein tester now on the market to determine its practicability and reliability under ordinary factory conditions. The results of our experiments would not warrant us in recommending its general use at the present time, as the variable conditions upon which accuracy depend are extremely common in cheese factory work.

Since our last convention 17 district dairy meetings have been held, and 253 annual factory meetings have been attended by one or more of the instructors. These factory meetings are proving to be one of the best means of reaching the people, and are taking an important place in our work of dairy instruction.

It is not possible or advisable to read all the detailed figures connected with the reports of each district, so I have followed the usual practice of putting these in a tabulated form, which shall be available in the annual report of this Association.

Creameries.

The number of creameries in operation this season was 26. Mr. Singleton acted as instructor and inspector for 14 of them, and the others were taken charge of by the instructors in whose groups they happened to be located. They were visited regularly, receiving 24 full day visits and 86 call visits.

The number of cows from which cream was supplied to the creameries was 23,945, and the total amount of butter manufactured from May 1st to Oct. 31st, was 2,311,473 lbs., which is 599,473 lbs. more than last season.

There were 65 tests made for moisture in the butter, which showed an average percentage of 14.56, the highest being 17.4 and the lowest 10.6. The average percentage of fat in the cream was 27.5.

Notwithstanding that the weather conditions were much more unfavorable for the keeping of cream, the cream was reported as being received in better condition than last year, and consequently a better quality of butter was manufac-

Syndicate.	No. of factories in syndicate.	No. of full day visits.	No. of call visits.	No. of patrons.	No. of patrons visited.	No. of samples tested for adulteration.	No. of samples deteriorated.	No. of factories pasteurizing the whey.	Average per cent. acidity in pasteurizing whey.	No. of factories making whey butter.	No. factories which shipped cream and casein.
Almonte	40	69	183	1,548	156	1,965	....	....	....	1	....
Alexandria	36	65	150	1,024	25	500	2	1	.25	....	....
Brockville, East	46	52	275	1,547	76	1,258	1	26	.23	16	1
Brockville, West	42	67	152	1,025	141	1,084	7	14	.28	16	....
Brockville, North	44	76	190	1,068	60	1,166	....	....	....	20	4
Belleville	39	39	267	1,796	114	1,580	2	5	.33	....	....
Cornwall	37	59	211	1,062	120	918	7	18	.34	....	3
Chesterville	36	48	189	1,021	48	1,030	13	9	.31	4	1
Campbellford	39	66	229	1,506	121	2,050	5	....	....	1	....
Finch	34	58	162	1,113	107	1,371	10	2	.34	1	....
Kemptville	40	90	250	1,578	191	1,359	....	4	.31	2	....
Kingston	38	82	154	1,275	137	1,646	9	3	.45	5	....
Lindsay	24	33	181	1,144	81	1,228	2	5	.50	1	....
Madoc	30	60	130	877	350	2,590	7	1	.39	....	....
Morrisburg	42	65	214	1,173	84	1,346	....	2	.36	15	2
Ottawa	34	47	204	956	109	960	2	1	.23	5	....
Ottawa, East	40	74	278	1,125	81	943	4	....	....	3	2
Ottawa, West	35	42	170	1,410	101	783	....	7	.45	2	....
Perth	36	41	183	1,318	106	731	....	3	.38	7	....
Peterboro'	34	50	363	1,442	342	675	....	2	.55	7	....
Picton	36	55	315	2,871	333	1,890	....	15	.32	14	....
Plantagenet	44	67	242	1,260	46	1,117	5	....	....	1	....
Napanee	41	72	200	2,721	145	4,018	15	3	.30	6	1
Vankleek Hill	45	53	230	1,222	92	890	....	....	....	....	....
Outside Factories	1	2	2	25	1	.....	....	1	.75	....	....
	913	1,432	5,124	33,107	3,167	33,098	91	122	.37	127	14

tured. As yet the creamery forms a comparatively small part of our work, but it is a feature that offers great opportunities and one that is bound to grow in favor.

Factory Water Supply.

During the past summer, arrangements were made with Dr. W. T. Connell for the making of a bacteriological examination of the water supply from all our cheese factories and creameries in Eastern Ontario. Owing to the delay in our preparations we were able to secure samples from only 311 wells. The examina-

tion of these samples shows that 63 per cent. are contaminated, 17.1 per cent. slightly, 34.7 per cent. markedly, and 11.2 per cent. grossly contaminated, while the other samples are about equally divided between good and passable waters, that is, 37 per cent., with 18.6 per cent. good and 18.4 passable. The details of this work are to be found in the report of Dr. Connell to this Association, but its significance is so great that special mention must be made of one or two outstanding facts. For some years we have had good reasons to believe that the unsuspected water supply of many cheese factories had considerable effect in the production of foreign taints and flavors in the cheese. The reports on analysis of

Average loss of fat in whey.	Average per cent. of fat in milk.	Lbs. of milk required to make a lb. of cheese.	No. of factories paying by test.	No. of cows from which milk for cheesemaking was obtained.	Average lbs. of milk per cow, from May 1st to October 31st.	No. of lbs. of cheese made, from May 1st to October 31st.	No. of factories having cool curing rooms.	No. of factories making improvements in buildings or plant.	Estimated expenditure including new buildings and general improvements.	No. of factories kept in a sanitary condition.	No. of new silos built.
									$		
.23	3.64	10.76	2	13,536	3,266	4,014,194	1	35	5,800	39	28
.22	3.68	10.56	4	10,025	2,722	2,639,867	.....	4	2,000	33	5
.22	3.51	10.76	3	14,370	3,706	4,947,284	1	29	9,910	44	65
.23	3.65	11.01	4	13,903	3,875	4,893,260	3	21	3,500	36	37
.23	3.62	10.99	....	13,951	3,689	4,440,153	2	21	2,500	40	15
.24	3.59	10.70	....	16,194	3,367	5,084,471	7	9	2,600	38	33
.24	3.86	10.69	15	11,762	3,200	3,504,922	.....	35	3,755	24	25
.22	3.59	10.91	12	11,020	3,981	4,021,046	.....	20	6,000	32	55
.23	3.57	11.11	....	14,250	3,611	4,608,877	3	23	7,925	39	27
.22	3.70	10.57	....	11,777	3,038	3,382,537	.....	16	2,340	28	68
.23	3.67	10.84	7	14,812	3,240	4,424,224	.....	29	3,500	37	35
.26	3.70	10.96	1	13,509	3,311	4,171,979	.....	3	3,300	30	14
.21	3.70	10.93	4	7,596	2,501	1,738,006	1	23	2,000	24	7
.24	3.75	10.71	1	8,593	3,189	2,530,779	2	20	3,125	25	17
.22	3.53	10.61	....	12,931	3,810	4,640,325	.....	19	1,800	30	31
.20	3.68	10.77	9	9,496	3,275	2,885,719	1	15	2,065	34	53
.23	3.70	9.83	11	11,317	2,876	3,314,404	.....	12	7,679	40	2
.20	3.60	10.59	2	11,045	2,805	2,925,290	2	33	2,500	33	105
.21	3.65	10.74	....	9,000	3,555	2,883,414	.....	24	2,950	31	62
.24	3.55	11.13	11	11,006	3,069	3,033,337	3	25	7,561	34	26
.22	3.64	11.01	....	20,868	3,166	6,088,791	13	33	8,000	36	55
.23	3.81	10.18	1	8,691	2,933	2,502,441	.....	34	4,215	40	1
.21	3.67	10.70	....	23,378	3,204	7,002,321	4	35	4,075	38	47
.24	3.70	10.80	5	13,428	3,150	3,914,070	1	8	2,000	40	15
....	.....	10.50	....	140	3,214	42,857	.....	1	50	1	2
.23	3.65	10.74	92	307,598	3,406	93,634,568	44	527	101,150	826	830

these different waters certainly bear out our suspicions, and from now on even greater efforts will be made to secure purer water, which means so much in the manufacture of finest dairy products.

General.

The past season, so far as our work is concerned has been notable for two things, viz., long periods of warm weather, which deteriorated the quality of both milk and cheese, as well as decreasing the flow of milk, and for the high prices

which prevailed during the greater part of the season. What is usually considered as our Spring make of cheese was this year of a particularly high grade, as was also the Fall make, but our regular Summer cheese were not up to the standard of some other years when climatic conditions were more favorable. In spite of the inferior quality, however, there was an unusually small number of rejections made, and many makers escaped losses for no other reason except the rapidly-advancing market quotations which enabled the buyers to dispose of the cheese to advantage.

A Trip to Europe.

This year it was my special privilege (owing to the generosity of the Department and this Association) to visit Britain, where most of our export cheese is consumed, and there had an opportunity of seeing our cheese under entirely different conditions from those afforded before the cheese leave here. Leaving Montreal on July 15th, I arrived in Glasgow on July 24th, and immediately started an enquiry into the conditions in which our cheese arrived. Some 9,000 boxes went over on my ship, and I had the privilege of watching their unloading, and following them through different stages to the retail counter. Many of these cheese I had seen in the factories, which made their final appearance of double interest. In order to obtain as full information as possible I interviewed a large number of merchants dealing in Canadian produce in the principal cities of Great Britain, and succeeded in obtaining much that should be of assistance to us in the preparing of goods to suit the English consumer. It seemed to be the general opinion amongst all those men, that what we consider our best Canadian cheese are suitable for any of their markets and compare very favorably with their home-made cheese and those from other countries. They also stated that they had noticed a general improvement in our cheese from year to year. In comparing our average cheese with the average English and Scotch makes it was evident, however, that they excelled us somewhat in flavor and texture, and the principal reason for this is the superior condition of the milk supply, the sanitary conditions at their dairies being much ahead of ours. I was much surprised to find the demand in England very strong for a mild-flavored cheese, for I had been given to understand that the English people were lovers of cheese with a well-developed, or even sharp flavor. But I was informed that the English demand for milder cheese was growing by leaps and bounds, the quality that was in greatest demand, and at best prices, being those of mild flavor, close, smooth cutting, with a meaty texture. This fact should at once cause us to realize the need of better care of the milk at the farms, as it is only possible to make such cheese from clean sweet milk. An enormous market exists in Great Britain, but at the same time we should not forget that there will always be competition of a formidable character, which will require our best efforts to meet.

Amongst the more common complaints was that of broken boxes, and it was quite evident that the trouble is largely due to the boxes themselves, many of them not being properly built. Every care possible is exercised in handling the boxes by the transportation companies, who are obliged to cooper or replace breakages for which they or their employees are directly responsible. The covers fall off, the heads and bottoms fall to pieces, many boxes are too large for the cheese and others are not high enough in the band, all of which tend to give the shipments an unsightly appearance.

Practically all merchants complain of the losses in weights, which vary from

one to three pounds on a box. This bears out arguments of past years against the shipping of our cheese in such a green, uncured condition. Our competitors are much wiser in this respect, and very few Scotch or English cheese are placed on the counter before they are two months old, while cheese from New Zealand never reach their destination much under three months. The loss of weight is inseparably connected with their next common complaint, which is that of leanness of quality. This year this defect was more pronounced than usual, as, owing to the great shortage of cheese in Great Britain, the cheese went to the consumer almost immediately after their arrival from Canada. This is a defect easily remedied, and means that we simply must discontinue the practice of shipping our cheese at such an early date.

The greatest general complaint on quality is to the effect that our cheese are not smooth enough in texture, not spreading easily, especially our Summer or hot weather cheese. We cannot remedy this condition by leaving more moisture in the curd, without having a pure milk supply. Much of the dry texture is due to over-salting and high-curing temperatures. It is along these lines that other cheese excel ours, but with proper facilities for cooling the milk and cool-curing rooms for the cheese, there is no reason why they should.

Frequent complaints are made against the size of many of our cheese, many being too heavy for the general trade. Many of the retail stores are in charge of women or girls, and cheese weighing over 80 lbs., are hard for them to handle, and the smaller cheese, ranging from 75 to 80 lbs., enjoys the greatest popularity on this account. Occasionally shipments of 100 lbs. cheese are wanted for window show purposes, but these are not frequent. In many of our sections the size of cheese has increased owing to the increased cost of boxes, but the practice does not meet with favor in England, and we should bear in mind that if we are to cater to this market we must give them the goods which their people desire.

It is not possible to give all the details of my trip in this report, but an effort will be made to convey all the information obtained to the instructors, makers, and patrons, during the coming season. I feel greatly indebted for the valuable information and assistance afforded me while pursuing my enquiries, to the cheese merchants in the various cities, and especially to Mr. Findlay, the Canadian Cargo Inspector, at Glasgow, and Mr. Grindley, Chief Canadian Cargo Inspector, at Liverpool, both of whom were untiring in their efforts to assist me in every way possible, and to Mr. Robinson, who took me on a visit of inspection to various farms and dairies in Scotland. In fact, I feel indebted to everyone, including Prof. C. C. James, Mr. Ruddick, and the Montreal merchants who through letters of introduction made my reception particularly pleasant, and to the transportation companies, all of whom were most obliging in every way.

For the benefit of the members of this Association, I have had three cheese from prize-winning dairies, of three types of English and Scotch cheese, sent out. They are here to-day, where they may be examined and tested and comparisons made with our best Canadian goods.

I again wish to express my appreciation of the manner in which the work of instruction was carried on during my absence by the instructors, and by Mr. Singleton, my assistant, to whom the direct responsibility of the work was entrusted.

With continued efforts along the lines we have been following there is no reason why the dairy industry of Eastern Ontario should not grow and prosper to an even greater extent than it has in the past.

Q.—Now that you have this information, what would you advise us to do in order to compete in the British market?

Mr. Publow: I have found that practically every man who was getting our best types of cheese said that they were practically as good cheese as they required, and I came to the conclusion that all we had to do was to imitate the best conditions. If we can get all our conditions as good as our best we need not be afraid of any competition. It is up to us to improve our average conditions. We must have better sanitary conditions under which the milk is produced, and it must be delivered at the factory at a lower temperature, and we must keep the cheese for a longer period. They want a close cheese, and they want them smooth and meaty. They want a cheese that will spread easily, and it would not be safe for us to increase the water content in these cheese unless we get sanitary milk and better conditions in which to ripen them. That is the one way in which our people would get more money.

Senator Derbyshire: What do you intend to do this next year with regard to this water business? That is a serious matter.

Mr. Publow: Yes, there is no doubt about it, and we are going to look more closely into it. We have been working along these lines for the last few years, and it is difficult to get the people to realize that there is very much need for that work. Wherever there is the least suspicion of the water being wrong, the wash water should not go into the whey tanks.

Q.—Then it would be necessary to have a special drain to run off this water?

A.—Yes, it certainly is.

Senator Derbyshire: You have not told me what you are going to do about this water.

A.—We have in our minds that wherever we come to a factory, and the water is wrong, and the men won't fix it, then we are going to prosecute them for using it, but we are going to try persuasion to see that they get a good supply without going to extreme measures.

Q.—If the wash water goes into the whey tank and is thoroughly pasteurized would it be all right?

A.—Yes, that will prevent any taint going back into the cans. Cheese from one factory that were sent to the Old Country on a special order when they were held for some time were found to be rank in flavor, and were returned to this country. They were the foulest smelling cheese I ever saw, and I think it could be traced largely to the water. What we are concerned about is the manner in which the cheese go to the consumer. When they are shipped earlier many of the taints are not noticed. I wish I had some of my boys over there with me, because if they had seen some of our cheese in the Old Country they would practise different methods.

Q.—If the milk was cooled down would it be possible for us to retain more moisture in our cheese, and make a gain in quality, and have better returns for the patrons, because it would take less milk to make a pound of cheese?

A.—Yes. The sounder the milk is the more moisture you can leave in the cheese with safety, and the more moisture you leave in them the more necessary it is to have a lower temperature to cure them. The reason our cheese show that leanness is largely due to the heavy salting and the high acidity we have to give.

Q.—Do you know what the milk would test out of which these English cheese were made?

A.—Only at one place, and that was 3.9.

MR. RUDDICK: Do you find the texture of the Scotch and English cheese any smoother than the well-cured Canadian cheese?

A.—No.

Q.—Don't you think the texture of the Old Country cheese is due to cool curing temperature?

A.—Both these cheese here are August cheese, and the temperature in the room the day I was there was eighty degrees. Of course that is an unusual condition.

SENATOR DERBYSHIRE: The milk is delivered in better condition, and the cheese never reached that high temperature in the factories. The great secret is the better condition in which the milk is delivered. The makers have full control of the milk themselves, and it is free from contamination. In all the places I visited except two, the makers fed the cows, milked them, and cared for the milk themselves; and I think if I had one of our fine cheddar cheese here you could not distinguish it from one of the Scotch cheese. We have got into a system of ripening milk too low before the addition of rennet. Sufficient time is not given in the cooking of these curds; they do not remain long enough in the whey to give that smoothness of texture. They give as much acid on the dipping of the curds as we do; in fact, they give more.

Q. What acid test do they use?

A.—They test by the iron, but nearly every factory has the acidemeter test.

Q.—Are they using cultures?

A.—Yes.

Q.—Their milk must be sounder than ours?

A.—Yes, but what they can do we can do.

Q.—Are their makers more proficient than ours?

A.—The first thing that impressed me was the thoroughness with which they did things.

Q.—What percentage of acid did they add?

A.—.19, setting sweeter than we do. Their milk was reasonably sound, and the acid came along sufficiently fast.

Q.—Do they use the same amount of culture?

A.—Yes, from one-quarter to one-half per cent.

Q.—You didn't see a swill pail of old milk held over in a corner?

A.—No. Every dairy I visited was scrupulously clean.

Q.—Did you see any dairy drawing their milk eight or ten miles?

A.—No.

Q.—Is there much Canadian cheese sold over there for Scotch and English?

A.—I did not see Canadian cheese advertised to any great extent. I saw some sold on the same counter as the best English and Scotch. They were not advertised as English cheddars, but as "best cheddars." There is very little cheese sold according to the country it comes from; they are sold according to quality.

For instance a shop keeper is going to retail ten cheese a day (many of them sold more than that). The first thing in the morning, the cheese are taken out of the boxes and stripped of their bandages, and cut up, labelled, and placed on the counter. Those of mild, clean flavor, and close smooth body and texture, being labelled finest Cheddar, best Cheddar, and so on, and the best price asked (it may be eightpence per pound). Those that are slightly open or coarse in texture, or acid in flavor, may be sold for sevenpence, or may be marked down to sixpence. Before I came away I saw them selling from sevenpence to tenpence, according to quality. I saw cheese from the same factory, graded, and a difference of six cents being asked for them on the counter. If such a thing as that would take place in this country, there would be very little need for men to go around trying to persuade cheese-makers and farmers to do what is in their best interests. This grading is largely done by the retail men, and it appeared to me as though that was where he made his money. Supposing I bought 500 finest Brockvilles, or finest Belleville, or finest Peterboros, and when I came to cut these cheese up I found that they were not up to the standard, I would likely return them to the importer or ask him to make good. If I had bought them as slightly under finest, I would expect to find a percentage of fine cheese, and the larger the percentage of fine cheese in the lot, the more money I would make, and as a result of the large percentage of fine cheese from many factories, certain brands were in splendid demand.

Q.—Do they give the reason on the ticket for the difference in price?

A.—Yes; in many of the shops they noted the defect in the cheese, and in other shops they did not.

Q.—Is it possible to make a meaty cheese out of 3 per cent. milk?

A.—Yes.

Q.—Do they allow the whey to be returned to the cans in Scotland?

A.—No.

ADDRESS.

G. A. Putnam, Director of Dairying Education for the Province of Ontario, Toronto.

It is always a pleasure to meet with men who, by their efforts, intelligence, and industry make it possible for us to report from year to year a general advance in the dairy industry in Ontario. It is a real pleasure to meet with you, and I am sure you will get great benefit from the discussion of the practical subjects bearing upon your special work.

We are inclined to criticize the farmer for not doing better. I am forced to recognize the situation as it is. Many of our farmers and dairymen in this Province know what they should do in order to make success in their special line.

But they are handicapped on account of the scarcity of labor, and they cannot do that which they know should be done. They cannot cultivate their lands as they would like to see them cultivated—and the farmers are coming to appreciate more and more the wisdom of thorough cultivation. They cannot grapple with the weed problem as they would like to, chiefly on account of the expense of labor.

It is a great pleasure for me this morning to congratulate the farmers and the dairymen upon the financial successes which have been attained; but I would like to ask if you are all doing your part to make the community in which you live just a little better place to live in? I wish to congratulate you upon the good prices that have ruled during the past season. These prices were made possible by the fact that we had in this Province of Ontario an efficient lot of makers. Mr. Publow, I think, recognizes the fact that many of these makers are working at a great disadvantage. In all sections we have a few factories that can make first-class goods from the raw material which they receive, but in many cases it is practically impossible; and I think the makers should be congratulated on the excellence of the standard which they have been able to maintain, and the general uniformity which characterizes Ontario goods at the present time.

In looking over the results of the work throughout the province we also note that many men are doing a great deal to improve their herds, and there is a marked improvement in the quality and the average production of many herds. The dairy division of the Dominion Department of Agriculture is doing excellent work along that line. There is plenty of work for all to do.

This year has been a year when the man who had made provision for soiling crops and has his silo and his green feed for the summer months appreciates the value of such provision. Silos are dotted all over this province, and many farmers would have been forced to sell their stock at a great sacrifice this winter if it were not for their silos. There has been a marked advance in seed improvement, as the farmer realized that in spending a few dollars in securing better seed, he has had it returned to him many fold. Some farmers, who, three or four years ago, were selling their oats at fifty or sixty cents a bushel, have sold their seed this last season for over $2 a bushel, and that has been on account of just a little extra effort on the part of that individual farmer. They have a great many inquiries at the Agricultural College regarding the treatment of pasture, and that is a helpful sign, while Mr. Publow reports that the farmers are taking better care of their milk, which is most essential. You cannot attain the best results in any line of dairying unless you take first-class care of the raw material.

I will not take time to go into the matter of the granting of certificates to cheese makers, but I can see in this system of regulating the manufacturing part of the business that the position of the maker is going to be improved, and I believe that the intelligent and industrious young man who makes a study of the dairy business will do well to follow that line.

We also note in the cheese factories and creameries a marked improvement in the sanitary conditions. A great many septic tanks are being installed, and the water supply has been a matter of deep concern. Only yesterday I asked for an increased grant for the purpose of carrying on further experiments and investigations regarding water for the factories.

I think it is quite in place to mention, upon this occasion, the advance which has been made in fruit growing in this Province, because I think fruit growing should go hand in hand with dairying. Only the other day a farmer told me he planted fruit trees in his fence corners and this year he made more out of these fruit trees than he did from the rest of his farm. We have many examples of the great profit which can be made in the fruit industry, and there never was a time in the history of the Province when that particular line of farming was receiving greater attention, and the returns showed greater profits.

All this is encouraging. We have had for many years our excellent agricultural

press, the Farmers' Institutes, the Agricultural College, and the local press to a certain extent, assisting in the dissemination of good, sound, common sense, relative to farming; and while it is discouraging to find in some districts that the farmers do not respond to this, I think you cannot go to any section of the Province where you will not find a few farmers who have benefited greatly by this information and by the example which has been set by fellow farmers. We are coming to realize in the Department that there is nothing which quite takes the place of the practical demonstration. Farmers, like other people, like to be shown. They want you to give them some demonstration of what can be done in fruit growing, dairying, cultivation, and other branches, and it is through these demonstrations that we are able to induce the farmers to follow up-to-date methods. We come across many men who are following up-to-date methods as a result of reading, or hearing lectures, or noticing the methods of some fellow farmer; and they have planted trees or increased their stock or drained their land, and it has paid them many times over. This is encouraging, and it is an intimation to the Department not to slacken their efforts in these educational lines.

It is only yesterday that I got a letter from the Canadian Pacific Railway stating that they were prepared to give us a full train for instruction purposes. The train will contain demonstrative and illustrative material, and will be manned with good lecturers, and will go over most of the C. P. R. lines in the Province. This will be in addition to other work we will continue to pursue by way of Farmers' Institutes, and various meetings held through the co-operation of District Representatives.

All these efforts we are glad to know the farmers are coming to appreciate more and more.

If we find an individual farmer making a success of fruit growing or stock raising or milk production he is handicapped unless there are others in the locality producing goods of the same quality, and the greater number of men who can be induced to go into some special line in a given district the more likely is the individual to succeed. When you have a crop of fruit so that you are able to put up carloads of one kind of apples, or when you have dairymen in the district who are able to ship cream or milk in large quantity, it is only in these districts that the individual farmer will receive the greatest benefit from his efforts. We have not reached the time in this Province where the success of a group of farmers works to the detriment of the individual, if indeed this ever occurs. In the districts where we have large numbers engaged in bean growing, fruit growing and tobacco growing, it has been a benefit to all. Bean and tobacco growing are giving large profits, and owing to the increasing proportion of those who can produce first-class quality the better the market is for the individual. I see no reason why the Province of Ontario should not become the specialized Province of the Dominion. You know very well that the vegetable grower or the fruit grower or the dairyman is, man for man, better off than the general farmer or the grain grower; and I think we can look to the day when Ontario will be the specialized Province of the Dominion. You will find thousands upon thousands of acres of fruit, but there is no limit to the demands which will arise in our new western provinces and in our own Northern Ontario. We will become very large producers of poultry, the combination of dairying, fruit growing and poultry raising is a good one, and the farmers of other Provinces will come to this province for their breeding stock.

The one great problem is that we should have more people, and it is to be hoped that the labor problem will be solved in some satisfactory manner. It is also essential that the farmers and townspeople do their part to see that the conditions for

the people that we already have are made more attractive, and thus keep the people that we have.

In closing, I wish to refer to the sale of cheese in Ontario. Mr. Publow referred to the stores in the old country where they had long counters filled with cheese for sale. Where do we find these conditions in Canada? I have taken delight in securing well-cured cheese for my own use, and have sent samples of them to my friends, and the universal statement from these people has been, "If we could get cheese like that we would gladly buy." We cannot get it in the average store, and if you go to a retail store in Toronto you do not usually get cheese which appeals to you; it is not properly ripened. I think this Association should take some stand upon that, and endeavor to increase the home market. With the high prices which have prevailed during the past season, and are likely to continue, I think we can look forward with every hope of continued success in the dairy industry. The large cities are going out farther and farther for their cream and milk. They are now shipping it from Oxford, Elgin, and Norfolk counties to Toronto, and the demand for milk is increasing to such an extent that we cannot look for a very rapid expansion in the manufacturing of cheese, and that makes it almost certain that the high prices which rule now will continue. The outlook is very bright for Ontario dairying.

CARE OF CREAM AT THE FARMS AND RIPENING CREAM AT THE CREAMERY.

Geo. H. Barr, Ottawa.

In 1910 the Dairy Division, Ottawa, conducted experiments on the Care of Cream at two farms near Renfrew, and had the cream delivered to the Renfrew Creamery, where it was made into butter. A good deal of the information obtained from these experiments has already been published, but I wish to refer here to a few of the results.

Cream could not be kept in a sweet condition in the cellars for 36 hours, and when left uncovered it had a strong cellar flavor.

We found it impossible to keep cream sweet for delivery twice a week with water from the well at a temperature of 48 degrees changing it every night and morning in an insulated tank.

The following figures will show clearly the temperature at which cream should be kept at the farms to have it in sweet condition:

Temperature and Acidity of Cream Kept in Water and Ice for Different Periods.

Length of time kept.	Average temperature of cream.	Average per cent. acid.
36 hours	50.6 degrees	.145
36 "	55.0 "	.170
36 "	57.5 "	.190
36 "	58.5 "	.210
36 "	64.0 "	.510
60 "	53.0 "	.150
60 "	55.5 "	.310
72 "	58.7 "	.380
84 "	47.5 "	.165
84 "	54.0 "	.390

The above figures show that when the cream was cooled to 55.0 degrees soon after skimming, it kept perfectly sweet for 36 hours, or for delivery to the creamery every other day. This temperature can be secured at most farms with the ordinary well-water if an insulated tank is used.

To keep cream sweet for 84 hours or for delivery twice a week, it must be kept down to 48 degrees. To do this, ice must be used.

We were much disappointed with the keeping quality of the butter made from cream delivered at the creamery in almost ideal condition and then allowed to ripen naturally. The following figures will show how quickly some of the butter deteriorated in flavor:

8 days old	44.0 points	35 days old.....	39.5 points
8 " "	44.0 "	19 " "	38.5 "
6 " "	43.5 "	28 " "	39.8 "
5 " "	43.3 "	32 " "	39.3 "

This is, unfortunately, too characteristic of a large percentage of butter made from gathered cream. These results led us to carry on further experiments at Renfrew in 1911 along the line of cream ripening, to ascertain, if possible, some method of handling gathered cream at the creamery that would give us good keeping butter.

All the cream received at the Renfrew creamery is delivered in individual cans, a good deal of it coming in by train. This enabled us to select almost any kind of cream we wished to experiment with.

As the cream was being delivered by the patrons, the kind of cream we wished to experiment with was selected and put into one of the creamery vats. After being thoroughly mixed, it was drawn off into ten gallon cream cans, each experimental lot containing 160 lbs. of cream. Pasteurizing, cooling and ripening was done in these cans in a wooden tank in the creamery.

Pasteurizing.—In every case the pasteurizing temperature was 150 degrees. This temperature was maintained for 20 minutes and then the cream was cooled to ripening temperature as quickly as possible with water and ice.

The cream was usually cooled to churning temperature between 6 and 8 o'clock in the evening.

The "starter" used in all the experiments was made from Skimmilk Powder, manufactured by the Pure Milk Products Co., Toronto, Ont. Ten per cent. of starter was used.

In ripening and churning, we tried to adjust the temperatures and other conditions to suit the different lots of cream, so that the very best results would be obtained.

The butter was scored by the writer and Mr. J. G. Bouchard when about two weeks old, at which time it was taken out of the creamery cold storage and shipped to the Ottawa Cold Stores, where it was kept at a temperature of 10 degrees. The creamery cold storage was kept at about 42 degrees. On October 20th, the butter was shipped to London, Ont., and there scored by Messrs. I. W. Steinhoff and J. B. Muir, extensive buyers of butter and cheese and also expert judges, also by Messrs. Fred Dean and D. McMillan, Creamery Instructors in Western Ontario. The

score shown opposite November 1st in the following tables is the average scoring of these four gentlemen.

Three experiments were made with sweet, clean flavored cream. In these three experiments, the average temperature of the cream when received at the creamery was 63.3 degrees, the average per cent. acid .30, and the average per cent. fat 27. In each experiment sufficient cream was put into a cream vat to make 8 churnings.

Four lots were drawn off as soon as the cream was received, then ripened and churned the following day, the dates being June 1st, 8th and 15th. The balance of the cream was kept in the cream vat for 24 hours longer at an average temperature of 55.6 degrees and then treated exactly the same as the other lots. The average per cent. acid at the end of the 24 hours was .55. These churnings were made on June 2nd, 9th and 16th.

TABLE I.—AVERAGE SCORE ON THE FLAVOR OF THE BUTTER FROM THE CREAM CHURNED THE DAY AFTER IT WAS DELIVERED.

Age of Butter.	Raw Cream.	Raw Cream. 10 % Starter.	Pasteurized Cream.	Pasteurized Cream. 10 % Starter.
2 weeks	42.33	42.66	43.16	43.00
November 1st ...	39.05	39.77	40.05	40.10
Difference	3.28	2.89	3.11	2.90

TABLE II.—AVERAGE SCORE ON THE FLAVOR OF THE BUTTER FROM CREAM CHURNED TWO DAYS AFTER IT WAS DELIVERED.

Age of Butter.	Raw Cream.	Raw Cream. 10 % Starter.	Pasteurized Cream.	Pasteurized Cream. 10 % Starter.
2 weeks	41.83	42.33	42.91	43.08
November 1st...	38.94	39.17	39.77	40.05
Difference	2.89	3.16	3.14	3.03

It will be seen from the foregoing tables that in every case the raw cream scored the lowest. In no case does the raw cream with starter score as high as the two lots of pasteurized cream. There is very little difference between the scores on the two lots of pasteurized cream, neither is there much difference between the scores on the cream churned the day after delivery and that churned two days after delivery, as shown in the following table:—

TABLE III.—AVERAGE OF ALL THE SCORES ON THE BUTTER CHURNED THE DAY AFTER DELIVERY AND THAT CHURNED TWO DAYS AFTER DELIVERY.

Churned.	Acidity in Cream when received.	Raw Cream without Starter.	Raw Cream with Starter.	Pasteurized Cream without Starter.	Pasteurized Cream with Starter.
1 day after delivery.....	.30 per cent.	40.79 per cent.	41.58 per cent.	41.87 per cent.	41.92
2 days after delivery.....	.55 "	40.64 "	41.05 "	41.75 "	41.79

The sweeter cream scores slightly higher in every case, but the total difference is very little and would indicate that when the flavor of the cream is clean, a difference in the acidity as here shown at time of delivery has little effect on the flavor of the butter.

Tainted and Sour Cream.—I am aware that the quality of the cream at the Renfrew Creamery is better than at many cream gathering creameries, and, for that reason, we were perhaps not able to get as bad cream to experiment with as some buttermakers handle. Some of it was, however, as bad, I think, as anyone would care to receive. On three occasions, we selected the worst flavored cream delivered to the creamery.

The flavor on the different lots selected might be classed as stale cream, bitter, cowy and rancid. The average temperature of the cream when received was 67 degrees, the acidity .54 per cent., and the fat 28.16 per cent.

The following table shows the average score on the butter from different methods of treating this cream at the creamery:—

Table IV.—Average Score on the Flavor of the Butter from Tainted, Sour Cream, Churned May 18th, June 20th and July 12th.

Age of Butter.	Raw Cream.	Raw Cream. 10 per cent. Starter.	Pasteurized Cream.	Pasteurized Cream. 10 per cent. Starter.
2 weeks	40.50	41.66	42.08	42.50
November 1st.....	36.12	37.44	38.88	39.16
Difference	4.38	4.22	3.20	3.34
	Average of all the Scores.			
	38.75	39.81	40.73	41.10

These figures show that there is a decided advantage in pasteurizing tainted and sour cream and a further advantage in using a starter in the pasteurized cream, as the pasteurized and starter cream butter is almost as good in flavor on November 1st as the raw cream butter was when two weeks old. None of the raw cream butter scored above 36.5 points in flavor on November 1st.

None of the pasteurized lots scored under 38.5 on the same date. One lot from pasteurized cream, with starter added, scored 40 points on November 1st.

Yield of Butter.—In making a comparison of the yield of butter, the same cream and exactly the same weight was used in the two lots compared. The work was done as carefully as possible and the results should be fairly reliable.

In 18 churnings each of cream without starter and cream with 10 per cent. starter added, there was practically no difference in the yield of butter.

In the same number of churnings of pasteurized and unpasteurized cream, the loss in pasteurizing was .78 per cent.

In 9 churnings each of pasteurized cream with and without starter, the loss in the lots with 10 per cent. starter added was 1.04 per cent.

In 4 churnings each of pasteurized sweet and sour cream (.27 per cent. and .51 per cent. acid) the loss in pasteurizing sour cream was 1.01 per cent.

Moisture in the Butter.—The following table shows the average per cent. moisture in cream treated in four different ways, 9 churnings in each lot:—

Table V.—Moisture in the Butter.

Raw Cream.	Raw Cream. 10 per cent. Starter.	Pasteurized Cream.	Pasteurized Cream. 10 per cent. Starter.
13.94 per cent.	13.80 per cent.	14.32 per cent.	14.10 per cent.

Results of Cooling Cream in a Refrigerator and in Water and Ice for Two Different Periods.—A first-class house refrigerator was placed in the creamery, and the cream from one farm was brought in morning and night from Monday evening to Thursday morning.

Each skimming of cream when brought to the creamery was divided equally in two small tin cans, one was placed in the refrigerator and the other in a tank of water and ice until the following skimming was brought in and then emptied into large cans sitting in the refrigerator and tank.

The following table shows the results:—

Cream kept in	Average Temperature.	Average Acidity.	Lbs. ice used.
Refrigerator	53.9 degrees	.415 per cent.	221
Water and Ice	54.8 "	.230 "	178

There were 43 lbs. more ice used in the refrigerator than in the water. The average temperature of the cream was nearly 1 degree lower, yet the acidity was almost twice as high.

The covers were kept on the cream cans in both cases, and there was practically no difference in the flavor of the cream at any time.

Both lots of butter scored 42.5 points for flavor when fresh. On November 1st the butter from the water and ice-cooled cream scored 40.77 points and the other 39.88 points.

Conclusions.

An ordinary cellar is not the best place to keep cream.

Cream must be cooled to and kept at about 55 degrees to be delivered to the creamery every other day in sweet condition, and setting the cream in water, or water and ice, is the best method of cooling.

Cream delivered only twice a week must be cooled immediately after skimming to and kept at 48 or 49 degrees.

A refrigerator is not as good a place in which to cool cream as a tank with water and ice.

Natural ripening of gathered cream at the creamery will not produce a good keeping butter.

The use of 10 per cent. clean flavored starter improved the flavor and keeping quality of the butter.

Pasteurizing the cream gave better flavored and better keeping butter than adding culture to raw cream, especially when the cream was tainted.

Pasteurizing the cream and adding 10 per cent. starter gave the best flavored and best keeping butter.

It is doubtful if adding starter to pasteurized cream will improve the flavor and keeping quality sufficiently to pay for the trouble and expense of making starter.

There is a loss in pasteurizing cream, but the improvement in flavor and keeping quality should more than offset this loss, as well as the additional expense in manufacturing.

Cleanliness and low temperatures are the two greatest essentials in the production of fine flavored and good keeping butter.

Q.—How many hours before churning do you add the starter?

A.—We add the starter between two and three o'clock in the afternoon and churn the following morning.

Q.—What per cent. of acid would you recommend in receiving cream so that we get best results?

A.—2-10 of 1 per cent. I think you can pasteurize cream successfully with 25 per cent. if it is rich enough.

Mr. Short, Ottawa: We have a new material that we have been experimenting with for the purpose of making a cheese box. I have come to this meeting for the purpose of getting in touch with the cheese trade, in order to see how you feel about the matter, and what you think of these new boxes. We have carried on a series of experiments, and we are of the opinion that this material will answer all the requirements for cheese boxes. We believe that it will overcome the weaknesses which you now have with your boxes, and that it will be a great benefit to the trade.

Q.—Where will these boxes be manufactured?

A.—In Ottawa.

Q.—Have you ever had any cheese shipped in them yet?

A.—Yes; we have shipped several cheese in them. They are waterproof.

Senator Derbyshire: One of them came here with this experimental cheese, and it came in perfect condition, while one of the wooden boxes was broken, showing that this material held better than the old boxes.

Q.—Have you made any experiments in keeping cheese in these boxes any length of time?

A.—No.

Q.—Have you had any shipped to Montreal?

A.—Yes; we have had them shipped to Montreal and back.

Q.—How did the Montreal men like them?

A.—The people who handled them liked them very much.

Q.—Will they stand moisture in the refrigerator car?

A.—They will.

CHEESE AND BUTTER PROBLEMS.

Prof. H. H. Dean, O.A.C., Guelph.

It is with pleasure that I meet the Eastern Dairymen's Association after an absence of some three or four years. I sometimes think that the farmers and

dairymen east of Toronto get the idea that the work at the Agricultural College is largely for the farmers and dairymen of Western Ontario. I want to assure you that that is a mistake. Some of our best students come from the Eastern districts of this Province, and although the College is located in the Western part of Ontario we take just as much interest in the East as we do in the West, and, so far as the College is concerned, there is no East or West. It has been remarked that these dairy meetings year after year are largely a waste of human effort, and that practically the same problems are discussed on each occasion. Well, to a certain extent, that is true; but in every advanced country in the world we have government as a result of discussion, and I believe discussion to be the most important fact in advancing the rights and privileges of the people in any country.

The dictionaries define problem as "a question proposed for solution, decision, or determination," "a knotty point requiring to be cleared up." Cheese and butter-makers have many problems for solution, decision and determination, as well as many "knotty points," which require clearing up. A few of these I propose dealing with at this meeting.

Three Cheese Problems.

Overripe Milk for Cheesemaking.

This is a problem which is presented to the cheesemaker during every hot spell of the cheesemaking season. He has learned how to handle such milk so as to make fairly good cheese out of it, by cutting the curd finer and heating the curd to a higher temperature than usual in order to check undue development of lactic acid, but this means a loss of cheesemaking material, or rather results in less cheese being made per 1,000 lbs. milk, as tests so far made do not show very much difference in the milk solids lost in the whey, from overripe milk, as compared with normal milk wheys. As a result of five tests made in 1908, the milk solids in the whey from overripe milk averaged 6.8 per cent., while the whey from the normal lots averaged 6.71 per cent. of milk solids. Similar results were got in 1907 The chief difference is seen in the yield of cheese per 1,000 of milk, as seen in the averages of four years experiments:

	Lbs. Cheese made per 1,000 lbs. Milk.	
	Normal.	Overripe.
1908.....	94	91.30
1909.....	91.50	90.50
1910.....	91.44	88.96
1911.....	89.94	87.54
Average four years.	91.72	89.575

Difference in favor of Normal milks 2.145 lbs. more cheese per 1,000 lbs. milk.

The practical lesson to be learned from these results is the importance of having milk delivered at the cheese factory in a sweet condition in order to arrest the tendency to a lower yield of cheese per ton of milk. The yield is gradually going down. Stated another way, delivering the milk sweet for cheesemaking means a less number of pounds of milk required to make a pound of cheese, and the tendency is for this number to become greater, which means less profit to the farmer and cheesemaker. Milk can be delivered sweet by keeping everything clean and by cooling the night's milk to a temperature of 65°F. at the farm. It would be advisable to have all milk delivered at the cheese factory not above 70°F. The time will doubtless come when mixed night and morning's milk, over 70°F. will not be accepted for cheesemaking.

Acidity of Milk at the Time of Adding Rennet and at "Dipping."

Since the advent of the acidimeter, cheesemakers have been able to measure the acidity of milk and whey much more accurately than was possible under the "rennet test" method of determining acidity. The problem of milk acidity cannot be solved directly by means of a rennet test; only indirectly is this possible. Because of the importance of acidity in cheesemaking, the acidimeter has been of great benefit to the cheesemaker at two very important stages of cheesemaking, viz., the "setting" and "dipping."

As a result of a number of experiments in the years 1910 and 1911, we obtained the following results:—

—	Acidity of Milk at Renneting.	Hours for Curd in Whey.	Yield of Cheese per 1,000 lbs. Milk.
1910	.185 per cent.	2 hr. 27 min.	89.04 lbs.
	.239 "	2 " 42 "	88 "
1911	.171 per cent.	2 hr. 35 min.	92.1 lbs.
	.198 "	1 " 21 "	91.78 "

Average difference in yield of cheese per 1,000 lbs. milk, .69 in favor of "Sweet Setting":—

—	Average of Acidity at Dipping.	Lbs. Cheese per 1,000 lbs. Milk.
1910	.17 per cent.	92.418
	.20 "	91.685
1911	.171 per cent.	91.14
	.203 "	90.72

Average of two years' experiments, .577 lbs. more cheese per 1,000 lbs. milk by "sweet dipping." The solution of the acid problem with reference to setting vats and dipping curds is to have the acid under control and err on the sweet side rather than develop too much acid before adding the rennet to milk, or removing the whey from a curd.

Moisture in Curd and Cheese.

The moisture problem is an important one in cheesemaking. How can I conserve as much as possible of the natural moisture in milk, and at the same time make a fine quality of cheese is a question each and every cheesemaker ought to ask himself, if he would keep abreast of the times.

In order to find what percentage of moisture is contained in the curds and cheese at factories in the Province, we arranged in the years 1909 and 1910, for the Western Ontario Cheese Instructors to send samples of curd and cheese to the Dairy Department of the College from the factories visited by them. In 1911 ten Instructors in Eastern Ontario sent us samples. The average of these results are:—

Year.	District.	Average percentage of Moisture in		
		Curd at Dipping.	Green Cheese.	Cheese 1 month old.
1909.....	West Ontario	41.445	33.898	.....
1910.....	West Ontario	42.306	34.664	34.638
1911.....	East Ontario.....	44.555	35.238	34.647

The striking thing about this data is the increasing percentage of moisture in both curd and green cheese for the three years. (No samples of ripe cheese were sent in during 1909.) The green cheese at the O.A.C. averages about 35 per cent. moisture, and this we consider about right.

Losses of Moisture During Ripening of Cheese.

As a result of a large number of determinations in factory and O.A.C. cheese, we have concluded that the losses in moisture during the ripening of cheese are largely, if not altogether, from the rind of the cheese, and that what may be called the edible portion of the cheese (that which is eaten) suffers no loss of moisture in the "curing" process, but may, in some cases, increase its moisture content, possibly by the process known as "osmosis." There would also seem to be a loss of weight in some cheese which cannot be accounted for by loss of moisture alone. Chemical changes in ripening may result in the production of gases which are lost in curing. A familiar example of this is seen in the "huffing" of cheese. When the "huff" is pierced, the gas may be felt and heard, as it leaves the cheese. This gas is supposed to be produced from sugar compounds in the cheese. May it not also result from the decomposition of other food compounds? Who can solve the problem? We test the truth of scientific assumptions or hypotheses by observation, by experiment and by comparison. In this case we have largely relied upon observation and comparison, having very little data as the result of experiment, except as indirect evidence.

Effect of Temperature on Loss of Weight During Cheese Ripening.

If our theory be correct, we have an explanation of the reduction in loss of weight as a result of ripening cheese at a comparatively low temperature, as it is

a well-known fact that chemical changes take place more rapidly and more completely as the temperature of the compounds is increased. The student in chemistry knows that desired chemical changes frequently do not take place so long as the substances are cold, but the application of heat to the bottom of a test tube at once brings about the desired results in many cases: in other cases, prolonged heat is necessary. A green cheese is a small chemical laboratory; the students are rennet and other ferments, as well as innumerable bacteria; the chemicals are water, fat, casein, salt, lactic acid, and various decomposition products: the sun furnishes the heat for the students to work with, and if they get all the heat they would like, up to 98°F., there will be "something doing" in the chemical laboratory (the green cheese) before many moons wane. If the students do not "blow up" the cheese in order to see the fun of an explosion, it will not be their fault. Formerly we have considered the loss in weight as almost entirely a loss in moisture, but this is probably not the whole truth. There is an increased loss in weight in cheese ripened at various temperatures as follows, according to experiments made at the O.A.C., in 1911:—

Ripening Temperature.	Per cent. Shrinkage of Cheese in One Month.
40°F.	2.82
60–75°F. 1 week, then 40°F. for three weeks	2.94
60–75°F. for 1 month.	3.93

How much of this increased percentage in shrinkage is due to extra loss of moisture and how much to loss of other food products we are not prepared to say at present, but it is probable that it is not all due to loss of water. It also seems probable that the rate of evaporation is greater from the cheese ripened at the higher temperature.

Butter Problems.

More problems arise in buttermaking with reference to testing cream than in almost any other one phase of the creamery industry. We receive at the Dairy Department of the College more letters relating to cream testing than upon any other one part of the butter farmer's and creameryman's business. Why is this the case? There are several reasons. The farmer patrons of creameries appear to be suspicious of the methods of testing cream, and in some cases they would seem to have ground for their suspicion. Then it is so easy to make a mistake in testing cream, and mistakes in cream testing are from five to ten times more serious than mistakes in testing milk or fat, because cream usually contains from five to ten times greater fat percentage than does the milk.

The chief factors in obtaining accurate results in testing cream are: the man doing the work, accurate sampling and weighing of samples into the Babcock bottle, sufficient speed on the centrifuge or tester, and accurate reading of the test. The man doing the test should have some training under a competent teacher. The idea which is quite common, and which was urged as one of the strong arguments in favor of the Babcock Test, "that any fool can test milk," is

quite erroneous and has done much harm in preventing a more general acceptance of the testing plan. The time is not far distant when not only the glassware used for testing must be stamped correct, but the man who does the work must also be stamped "competent to do milk and cream testing." The "competent" man will see that all glassware is correct, that he has nine or eighteen grams of cream in the Babcock bottle, that the bottle is not too wide in diameter on the graduated neck, that the hot water added is between 130 deg. and 140 deg. F., that readings are made at this temperature, that the 24 bottle machine runs at 1,000 to 1,200 revolutions per minute, preferably driven by steam or electric power, so as to maintain a uniformly high speed for a sufficient length of time; he will also read the fat accurately—neither "under read" nor "over read." There is some difference of opinion as to whether the meniscus or curve of the fat in the neck of the bottle should be included. Messrs. Farrington and Woll say to read *cream tests* at the bottom of the curve; others say to read to the middle of the curve. It will make some difference whether using a wide or narrow mouthed bottle, as to how the readings should be made. The main point is to adopt a uniform method. We would suggest reading to the bottom of the meniscus on the bottles graduated to 40 per cent. or 50 per cent., using an 18 gram sample, and to the middle of the meniscus on all other kinds of bottles.

Are Composite Samples Reasonably Accurate?

Some creamerymen follow the plan of testing each and every delivery of cream, while others make composite samples for two weeks or a month and settle with patrons on the basis of bi-monthly or monthly tests. Some authorities say that if composite sampling is adopted there should be a definite relation between volume or weight of sample and weight of cream delivered by the farmer.

In our work at the O.A.C. creamery we have adopted the plan of monthly composite testing, using a mixture of 3 parts bichromate of potash to 1 part of corrosive sublimate for a preservative, and we have used the ounce dipper method of taking samples for the composite bottle.

As a result of a number of tests comparing ounce samples with aliquot sampling (1cc. for each pound of cream delivered) we got an average of 29.8 per cent. fat in ounce samples, and 29.77 for the aliquot samples. Range in fat content of the cream delivered, 25 to 33 per cent.

Comparing the testing of each delivery of three patrons' cream with testing by the monthly composite plan, we found that the former method credited these three patrons for the season (April to October) with 1,564.6 lbs. fat, whereas the monthly testing credited them with 1,552.4 lbs. fat, or 12.2 lbs. less than they delivered. Owing to evaporation from the composite cream samples, where the sample bottles are not tightly corked, especially if kept in a warm place, the tendency is for composite samples to give results *too high*. Composite samples should be kept in tightly corked bottles in a cool place.

How to Care for Cream on the Farm.

As the result of several tests made with cans and crocks, covered and uncovered, cream cooled and uncooled before placing in the can or crock, all kept on a cement cellar floor, we found that a bright, clean tin can is just as good for keeping cream as is a crock, and it is much lighter to handle and not easily

broken. A chipped or cracked crock is very likely to cause bad flavors in the cream. Where cream is not cooled before placing in the can or crock and the cellar air is pure, it would seem as if the can or crock should not be covered until after cooling. Where cream is added to the container daily, it ought always to be cooled before mixing with cream from previous separations. Undoubtedly the best place to hold cream is in a suitable box or barrel having cold water, or ice water, surrounding the can of cream. This method causes much more rapid cooling of the cream than air cooling, which rapid cooling prevents fermentation and enables the farmer to deliver sweeter and better flavored cream for buttermaking.

Cost of Pasteurizing Cream.

It is pretty generally agreed that the pasteurization of cream for buttermaking will add to the keeping quality of butter made from such cream. One objection to this method which has been urged is the added cost. Tests made during the season of 1911 indicate that the cost for power and water is not over three to four cents per 100 lbs butter. There is also the added loss of fat in the buttermilk. In some seasons and under some conditions, this extra loss of fat in the buttermilk as a result of pasteurizing the cream is much greater than at other times. In some comparative tests made in 1911. we found the average percentage of fat in the buttermilk from the unpasteurized lots as .231; of the lots pasteurized .31—a difference of about .1 per cent. higher for the buttermilks from the creams pasteurized. It is admitted that the value of the butter is increased on the average by one-half to one cent per pound. This is sufficient to more than pay the extra cost of heating, cooling and excess loss of fat in the buttermilk, while at the same time the reputation of Canadian Creamery Butter would be enhanced by a general adoption of pasteurization. At the O. A. College we have got the best results in ripened cream butter, by pasteurizing the cream comparatively sweet at a temperature of 180 deg. to 185 deg. F., adding about ten per cent. culture and ripening to about .5 per cent. acidity before churning.

Tests made during the season of 1911 indicate good results by using skimmilk powder as a basis for making culture or "Starters" for buttermaking.

Effect of Acid Neutralizers in Cream to be Pasteurized.

Cream frequently comes into the cream-gathering creamery in hot weather with altogether too much acid for the best results in buttermaking, and, particularly so. if pasteurization is practised. In this condition it needs no "starter," but rather a "stopper." Various "stoppers" have been suggested, such as viscogen (sucrate of lime), lime solutions, soda, etc. As a result of using Baking Soda, Washing Soda, Lime Water, and Milk Lime in the cream, in most cases before pasteurizing, we found that these neutralizers had the following effects:—

1. They reduce the acidity of the cream.
2. There was less loss of fat in the buttermilk.
3. The overrun was reduced nearly four per cent.
4. There was little or no improvement in the quality of the butter made by the use of neutralizers.

Further tests are needed in order to determine whether or not the use of neutralizers in sour cream is advisable.

Salt in Butter.

Buttermakers frequently find difficulty in obtaining a uniform salt content in the finished butter. As the result of a number of tests we found that the addition of five per cent. salt to different churnings caused a variation of 2.8 to 4.2 per cent. salt in the finished butter. The moisture content of the butter varied from 12.9 to 15.5 per cent. In order to obtain uniform results, the fat content of each churning should be known and the butter calculated as accurately as possible. The butter should be drained of its surplus moisture in the churn, and the salt accurately weighed. If a preservative be used, allowance should be made for the salt which it is likely to contain, which may be from 15 to 38 per cent.

Cheese and butter problems can be solved in one way only, namely, the scientific way, which may be summed up as follows: Keen observation of the fact; accurate record of the fact; correct inference from the fact. This is the method adopted in all sciences in order to know the truth, which alone can make men free and masters of the situation in which they find themselves. Any other attitude than that of "a hunter after truth" is intolerable for one who would master the problems which daily confront the maker of cheese and butter.

A MEMBER: A., B., and C. are dairy farmers, and one of them has as good cows as the other. Each of them gets fifty dollars for the first month, but the second month one skims ten pounds, another seven, and another eighteen. They have the same cream as previously, but they do not get the same amount of money. What is the reason?

PROFESSOR DEAN: In the second month the test varies; one man takes ten, the other seven, and the other eighteen pounds, and you want to know why they do not get the same amount of money. The fact that they vary shows that there must have been something entered into the problem to make it different from the previous month. The second man has evidently got richer cream, and he is taking the less number of pounds of cream from the milk. He is either turning the separator faster or is not feeding it quite so much. If his cream tests 42.6 he would get just as much as the previous month.

Q.—But he did not get it?

A.—He ought to. He has got a richer cream, and if that richer cream is read on that kind of a bottle, the probabilities are he will not get as high a test as he ought to have, more particularly if the sampled cream be measured into the bottle instead of being weighed. I would say in that case that the explanation is that he had not put the right weight of cream into the cream bottle, or he did not get the correct grading. If other conditions were the same, he ought to have had a higher test, and should have been paid for the same number of pounds of fat. Take the man who had eighteen pounds. More skimmed milk has gone into the cream, and he did not turn the separator fast enough, or he fed more milk into the machine and got more skimmed milk in the cream. He got more weight of cream, but his test would be light. If his cream were properly tested he would have the same weight of fat. Assuming all other conditions were equal, he would have a lower test, but he would have the same number of pounds of fat as the previous month.

Q.—The eighteen man tested 12, and the seven man tested 24?

A.—Something went wrong somewhere, there is no doubt about that; but if everything was right, even though he had a lower test, he ought to have been credited with the same number of pounds of fat.

Q.—Does the test guarantee that every man will get his rights?

A.—If the man who operates the tester understands his business and used correctly graded glassware he will get his just rights. One of the things claimed for the Babcock test was that any fool could test milk with it; that is a mistake. Any fool cannot test milk with the Babcock tester, and I am in favor of requiring that every man should take a certain amount of training, and he should not be allowed to operate the Babcock tester until he has a certificate.

Senator Derbyshire: And then he ought to be careful in his measurements?

A.—He ought to weigh the sample of cream, either nine or ten grams into the bottle.

Q.—If a man was putting seven hundred pounds into a separator, and he ran through three hundred and fifty pounds an hour, would he get richer cream, or would the separator do the same work as if he was running through seven hundred pounds an hour?

A.—He would certainly get a much higher testing cream if he ran the machine at one half the capacity. The cream would be so rich that it would clog the cream outlet. So long as the cream comes out freely you get satisfactory results from the separator.

Q.—Suppose you put three hundred and fifty pounds an hour through and the milk commences to flow out the skim milk spout the first thing, what is the trouble?

A.—It might be that your cream outlet was clogged.

Q.—I have a cream separator and the milk flows out the first thing.

Another Member: I would say that was caused by the cream being too thick when you start to skim. Unless you feed the machine full, it would flood the cream screw.

Professor Dean: You are skimming a very rich cream which tends to remain in your machine, and it is a long time before it finds its way out. Therefore your skim milk will come before your cream comes; if the force is not there it will not force the cream out. There will always be a certain length of time from turning the milk on before anything comes out the spout. The skim milk will always come before the cream, but you will find that there are always lapses from turning the machine before the skim milk comes out.

Q.—Speaking of bringing the milk into the factory at 70 degrees, would not the morning's milk have to be cooled?

A.—If the night's milk was cooled to 65 degrees or below, of course it would depend on the temperature of the air; I think it would have a tendency to cool your morning's milk down to 70 degrees. In hot weather the morning's milk would have to be cooled, in many cases a good deal would have to depend on the relative proportion of the morning's and night's milk and the temperature of the air. It would be better if they were not mixed at all, but it is not practicable to keep them separate on many factory routes.

Q.—Supposing your separator has been running all right and the next time you start the bowl overflows, what is the cause of that?

Mr. Gillespie: There is only one cause that I know of. If the separator is set up properly and the skim milk outlet is free and not choked it will not happen, and as long as the milk can get away you cannot overfeed it.

Q.—Is it not necessary to use a spirit level to set up the separator to make sure that it is perfectly correct, and you should see that the rubber rings fit properly?

A.—Yes.

ADDRESS.

J. A. McKergow, Produce Merchants' Association, Montreal, Que.

I was not appointed to represent the Montreal Merchants' Association. The gentleman who was appointed is not here, but I can point out a few things that we would like to have remedied.

I would like first to refer to the poor quality of boxes that are used in a great many of the factories. The wood seems to be very brittle, and easily broken and hard to cooper and put in proper shape. At a slight increase in cost much better boxes could be had.

Some makers persist in putting the big end of the cheese into the box first, making it impossible to turn the cheese out except by breaking the box. A little care and common sense would avoid all these things, and it is a wonder how many makers lack this and it causes a lot of trouble. There are some boxes on exhibition here to-day, and the makers of them evidently wish to offer a box that will be serviceable, and that will take the place of the wooden boxes. There is a strong prejudice in the minds of the British merchants and the Montreal merchants that will have to be overcome, because their experience in special boxes has not been satisfactory. It would be well to have some factories ship down a few cheese to Montreal in these boxes. Some of the defects might be obviated, and it might make them satisfactory boxes.

The appearance of the cheese from some of the best factories is poor owing to the careless manner in which weights are marked, some being marked in lead pencil which is very illegible. Some of the cheese have no scale boards under them, then we get a number of ugly brands; in some cases the cheese is branded on the reverse side. These conditions are found in some factories from almost every section. During the past week I had one hundred and forty boxes from the western part of the Province, and the quality was A1. The buyer would not examine them at all; he said their look was enough for them. I offered them at ¼ cent less, but he said they would not suit his trade at all.

Q.—What was the matter?

A.—Odd sizes, lead pencil weights, and poor appearance and they had no scale boards.

Q.—How did you find the quality during the past year?

A.—On the whole it has been very good, especially the fall make and the earlier makes. Of course during the summer season there is always a lot of high flavored cheese, but on the whole I think the quality has been better than the previous year.

We have had considerable trouble owing to the cheese being shipped out when too green. The makers should be careful not to do this in weighing up the month's make, trying to save a fraction in the price. This fraction causes a lot of harm to the name of Canadian cheese, loss in weight to the buyer, a deterioration in quality, and a lot of stomach aches to the consumers.

There is only one other point I wish to touch on. At a Cornwall board that I personally attend, they are working hard to have cool-curing rooms, to have the cheese held a proper length of time, and I think this will be a great benefit and will add greatly to the good name of any factory.

Q.—Is not the temperature outside of the factory the same as the temperature inside at a good many of these factories.

A.—That is what they are endeavoring to remedy, by getting good cool-curing rooms.

Q.—These new boxes appear to be all right. Is there any objection to them?

A.—I have not looked into these board boxes, but there was a man at Newington manufactured some composition boxes this summer, and he shipped down cheese from several factories to different houses, and each man got a claim back for boxes. The water caused them to crumble, even the cheese molding caused them to get soft and crumble. That box was different to these. There is no way of keeping on the covers, and there is no way of nailing covers on these boxes, and if the cheese gets a hard knock while in these boxes I think it would injure them.

Senator Derbyshire: The biggest cheese on exhibition to-day came in that other box?

Mr. McKergow: Probably it was wrapped up in cotton batting.

Senator Derbyshire: One of the wooden boxes was broken but the cheese that came in that box was in perfect condition.

Mr. McKergow: You cannot tell unless both boxes had the same treatment.

Mr. Publow: Our cheese go to England badly wrapped up, and most of the breakage occurs on this side. I think it would be a good thing to have the box arrive in the old country in good condition. I think you will admit that these wooden boxes we have here are as good as can be got in this country, and yet both of them are badly smashed coming up here by express.

Mr. McKergow: I think they receive the worst handling on the wharves; but I think in late years they have remedied that considerably.

Mr. Publow: We are particularly anxious to have our cheese of good appearance when they arrive in the old country. If they are going to go from this country with the boxes badly broken they are bound to have a poor appearance when they arrive in the old country.

Mr. McKergow: I think they are sold out of the boxes in the old country.

Mr. Publow: No, they are sold in the boxes, and I have seen them stand in the broken boxes and they certainly looked unsightly.

Mr. Barr: Is there a large percentage broken?

Mr. McKergow: We have had a lot of trouble this year. A number of the boxes we have been getting are much thinner than the boxes you have here.

Prof. Ruddick: The boxes break easier then in the dry, hot weather.

Mr. McKergow: I have been told that you can get plenty of wood from which to manufacture boxes if you put a little increase on the price.

A Member: Where shipping bill does not note any broken boxes and they come in broken do you not make a claim on the shipping company?

A.—Yes, we do.

Q.—In all cases?

A.—We should in all cases, but we do not.

Q.—I think if you did it would help to overcome this trouble.

Mr. McKergow: If a man is receiving one hundred lots of cheese a day, or one thousand lots in a week, and there is a percentage of ten or fifteen broken boxes, it means a lot of work to make a claim for a small amount like that. Some of the agents are careful to mark the number of boxes broken or damaged. In towns where there is a freight man that will be done, but at the smaller shipping points they do not employ a man to load the cheese and they are loaded by the shippers. We know of one case where the boxes were O.K'd, and a way freight came up, and the man said to the conductor, hold on till I move these cheese.

They were piled three high in the car, but the conductor paid no attention and came up with his train, and struck the car, and knocked the boxes down and smashed a lot of them. Then he said to the shipper, "They won't know what happened these cheese when they get to Montreal." I think the shipping companies are largely to blame for the broken packages, and that we ought to get after them.

SENATOR DERBYSHIRE: How long does it take before you get your pay if you make a claim on the railroad for broken boxes?

MR. MCKERGOW: All the way from six months to six years. They seem to make it such an objectionable thing that it is hardly worth while to make the claim. If there are only five or ten per cent. broken, we continually pass them even though they are marked broken on the bill of lading. It means an enormous loss to us, fixing up these boxes.

SENATOR DERBYSHIRE: Would not it pay the merchants of Montreal to see that these boxes were all replaced, and put the goods on the ship in first-class condition, in order to get an increased price?

MR. MCKERGOW: You mean for the merchants to pay for the broken boxes you shipped. I do not think it would pay at the present time. The Englishmen have not demanded that the box should be perfectly sound, but they object to their landing with the cheese exposed. If you sent over sixty boxes and fifty of them are rubbed off they will object to them, but they do not object to a small percentage.

MR. PUBLOW: I saw lots of cheese turned down altogether in that condition, and although they were offered for two shillings a hundred less, the buyers over there would not take them at all.

Q.—Have you had much trouble with short weights?

A.—Yes.

Q.—Is Mr. McLeod a properly authorized man to give these weights?

A.—He is appointed by the Montreal Produce Association. They pay for the weighing of the cheese, and he is an official in that respect.

Q.—He is not the official weigher for the Board of Trade.

A.—He is appointed by the Association.

A MEMBER: The firms in Montreal have got to take the weights that are given in Campbellford, and I do not think that is fair, because they are bound to be short weight even if they have an official weigher in Campbellford. I am satisfied Mr. McLeod is all right, but some people object, and say he is not an authorized official. In the Campbellford section they get the cheese inspected in the factory and they are weighed in Campbellford, and that weight has got to be accepted whether they are short or long; and I do not think that is a fair deal, because so many green cheese are shipped and we have had more short weights in this part of the country than ever before.

MR. MCKERGOW: That is a matter between the buyer and the Campbellford Board.

MR. HUME: There are always two sides to a story. We sold these cheese, and they are inspected in the factory, and if the buyer knows they are too green they are left there. We allow one half pound up weight subject to the Campbellford weigher. We think we have a perfect right to get all that these cheese weigh. Then with the one half pound allowed we feel that we are doing no injustice to any man. We only ask for the weights we have, and that is the way the cheese are bought and sold in Campbellford, and they are bought and paid for at the station. We think we have it down to a business basis and we think we are leading other parts of the Province.

SENATOR DERBYSHIRE: Years ago in shipping cheese from Montreal to Liverpool, London, Glasgow, and Bristol, after the merchant had sold his goods the returns would come back three, four or five pounds short weight, so that the merchant, who really thought he had made a profit on his goods, when he got the final settlement, was out quite a few hundred dollars on the shipment. They had a conference in Montreal, and they sent one man over to England who had a conference with the Englishmen, and it was agreed that if a properly qualified weigher in the city of Montreal would weigh these goods and furnish an official certificate with the invoice, and one with the draft, that they would accept these weights and pay for the cheese according to this weigher's certificate. The duplicate comes back to Brockville or any other place, and you settle on that certificate, and I think that is the right way to do it. When I used to buy on the Ogdensburg Board, I took in these cheese and weighed them myself, and do you think I lost in short weight. I did not take any weights I did not think I ought to have, but I made it sure that they would go through. Factories that ship into Brockville won't allow them to be weighed there, because they want them weighed by the city weigher at Montreal. I have cheese shipped every week from thirty-nine points and I would have to have thirty-nine men at these points to weigh the cheese. We made the arrangement that we would let the cheese go to Montreal, and that the factory people would take the certificate that Mr. McLeod makes, and it is proving perfectly satisfactory, as we never have a word.

A MEMBER: Last year I made one hundred and eighty thousand pounds cheese, and it was all sold to one man, and I gave ½ pound up weight. If the cheese would not go 80½ we called it back to 79, and all the short weights we had during the whole year was thirty-six pounds, and I think that is pretty honorable for the men in Montreal.

A MEMBER: You remember we had a deputation down at Ottawa at the instance of the *Ottawa Valley Journal*. Is it not a strange thing that when these cheese are on a down grade tendency we always have a short weight. (Cries of "No" and "Applause.") I am a salesman for a factory and last season I sold two hundred and seventy thousand pounds of cheese, and they went in an opposite direction from Montreal. I have not heard one cent of short weight. Every year that I sold to buyers in Montreal I ran from $25 to $35 short weight, and I would like to know how that comes.

SENATOR DERBYSHIRE: The men in England are satisfied to take Mr. McLeod's certificate, and the merchant who buys cheese from another merchant in Montreal takes his certificate. I cannot see anything that is more fair or honest. What has Mr. McLeod got in it? Not a copper, except to see that these men get sixteen ounces to the pound.

A MEMBER: Was it not a fair demand that the Montreal Association should allow the people at Ottawa to appoint a man to weigh these cheese.

SENATOR DERBYSHIRE: They are perfectly satisfied to do that.

Q.—Why hasn't it been done?

SENATOR DERBYSHIRE: Because the Department are satisfied with Mr. McLeod.

A MEMBER: In all fairness to Mr. McLeod, I would like to say, that I have heard him say that if any gentleman disputed his official weight of cheese he would pay his expenses to Montreal if he would come down and see the cheese weighed himself; and if after seeing them weighed he could show that they were not weighed properly, then he would pay his railroad fare and hotel bill. I

think when a gentleman is willing to do that nothing could be more honorable and I think Mr. McLeod is honorable from the ground up.

MR. WILSON: I have been selling cheese on the Brockville Board for twenty years. I sold four years for one factory and for sixteen years I have been selling for a combination of factories. My experience has not been that when the market goes down the weights are docked. I have had no such results. Our weigher takes ¼ pound up beam and you give ½ pound. You ship the cheese ten days old, and we ship them seven days, and they are weighed when ten days old, and I think we fare better with ¼lb. than you do. I sold a combination of twelve factories for the past season and the total claims for quality was $27.32. We are used fairly well by the Montreal exporters. If the cheese are inspected at the factory it means a large amount of money expended sending a man through the country, and the producer has to pay for that.

MR. LEGGETT: I have been shipping to Montreal, and five factories went through O.K. all summer, but the other five had not. I did not see why they should make a claim on the other five, and I sent them to Brockville; they cut them in Brockville just the same.

MR. PUBLOW: I have not heard a complaint from the Campbellford salesman here.

MR. STONE: I do not see why the Campbellford weigher, who is appointed by the town of Campbellford, is not just as honorable as Mr. McLeod. Our rules are that cheese must be inspected in the factory and they are sold subject to being weighed by the town weigher, and we have the thing settled right on the ground where we ship. (Applause.) We have been selling the cheese on sight draft, and we fought that down, and we now demand our money at the point of delivery. If we bring our hogs in here we sell them subject to being weighed on the town scales.

SENATOR DERBYSHIRE: Every Board ought to run their business to suit themselves; nobody is finding fault with the way you are doing it.

MR. HUME: I think probably I have been misunderstood. I do not wish to cast any reflection on the Montreal Cheese Board, nor on the weigher, but it was stated that the Campbellford men had to take the weight at Montreal. That is why I got up to say that cheese were bought subject to the weights.

Q.—Can you give the name of the box factory that will make a heavier box?

MR. MCKERGOW: I cannot tell you at present, but I will write you.

SENATOR DERBYSHIRE: All you have to do if you want a better box is to go to the local factory and make arrangements with them for the kind of box you want. Arrange for the thickness of the hoop and for the top, and the number of nails. Everybody knows that a great many of these lots are not half nailed. When they leave the factory they are damp, and they will stay together. At some of the factories, when these boxes are delivered by the box makers, they are inspected and those that are not good are returned. The belts should be made from live timber cut this year. A great majority are made from dead timber and that is why they go to pieces.

SCOTCH AND ENGLISH CHEESE.

THE CHAIRMAN: I will now ask Mr. Publow to give us some information about these Scotch and English cheese.

Mr. G. G. Publow: We have three cheese here. The first is the English Cheddar; the colored cheese is the Scotch Cheddar and the flat one is a Dunlop cheese. These are the three types of cheese that we have to compete with, and I would like to know what your opinion is with reference to the quality of these cheese.

(At a show of hands it appeared that about the same number preferred the first and second cheese, and very few thought the last one was the best.)

Q.—Is there any difference in the age of the cheese?

A.—No; not over a week's difference in the age of the first two cheese. They are both August cheese, and the second one is an early September cheese. The Scotch cheese most resembles our best type of cheese. In England the first cheese brings the most money. It is a question to me whether you could tell any difference between this colored cheese and our finest cheese. There is a difference in color in these two white cheese. Many of our buyers have been asking us for a dead white cheese, and that cheese, I found, was bringing the highest price in London, but it is a dangerous cheese for us to make. Which of these cheese, do you think, would register the highest amount of moisture? That white cheese contains 34 per cent. fat and 39 per cent. moisture. I think that the paleness is due to the acidity. It has developed considerable flavor since it was purchased. It was mild when I purchased it. At the time we examined the cheese practically every man pronounced the white cheese the best in flavor. The Scotch Cheddar contains 35 per cent. fat and 35.5 per cent. moisture. It has held best and cuts best to-day, and will be the best in three or four months from to-day, and I think that type is the safest for all Canadians to make, facing all markets. That type of cheese will bring the best price in all markets of England and Scotland, except, possibly, some few men in a special trade who will pay more for the white cheese. The colored cheese is the one that the makers in Ontario should strive to imitate. I am not speaking of the color, but of the type of the cheese. We are getting more cheese like that every year, but have not got nearly enough of them yet. Practically every man I saw coming into the warehouse over there to purchase cheese based his standards on such quality as that. This white cheese crumbles more than the other cheese, and that is not as acceptable to the shop-man, who has to cut them on the counter. The Scotch Dunlop is in great demand, but it does not bring quite as much money as the best cheddar.

This other cheese contains 32 per cent. fat and 37½ per cent. moisture. It is the poorest quality of the three, yet that cheese is made with one half pound less milk, and they are going into the manufacture of it with the object of getting as much money on the market for it and it will take one half pound less milk to make it. It is difficult to keep cheese like that close, and I do not think it is safe for us to advocate that type of cheese with the present condition of our market.

Q.—Has that colored cheese been subject to as high a temperature as the others?

A.—Yes, all the way through.

Mr. Ruddick: There would be a difference in the factories where they are made. There is a big difference in temperature in Somerset and Scotland.

Mr. Publow: I bought them all in London and they were subjected to the same heat there.

Q.—Have they cool-curing rooms?

A.—No; they take their chances.

Mr. Ruddick: The Scotch cheese was practically cool-cured, because their temperature very soldom goes above sixty to sixty-five degrees.

Mr. Publow: There was no such weather as that all the time I was there.

Mr. Ruddick: The character of the cheese shows that there was a difference in the curing.

Mr. Publow: There was a lot more water in the cheese, and fermentation has taken place owing to the large amount of water that is there. There is no doubt it gives the Scotch makers an advantage over the English makers. The English makers probably develop a higher acidity on their curds owing to the higher temperature. It is necessary to have the milk set sweet to get the cheese as sound as that, with that amount of moisture and acidity.

Q.—That centre cheese is known as the amber color and that is the color we would like to get.

Q.—What about the holes in that cheese?

A.—They are not very open. What I want to impress upon the makers here is the texture of these cheese. That is what the people in the old country want. I would like to see a resolution passed at this meeting saying that it would be advisable that all factories at their annual meeting, should pass a resolution that no milk should be accepted in the factory above 70 or 75 degrees. We are making progress from year to year, but there is hardly a factory or district, when the weather comes hot, that we do not get a lot of poor cheese from—cheese that will not bring the best price, and it takes a lot more milk to make the cheese. Every factory has some people who are not doing what is proper with their milk, and the other fellows are adding to their loss if they allow these men to come in. From what we can learn from the makers and instructors, we get the most acidy cheese from the factories where the milk is taken in at a high temperature, and an extra pound of milk to make a pound of cheese amounts to a cent or two cents difference in the price of the cheese. If any man would advocate here to-day that he had some system whereby the farmers could get one cent more for their cheese I think this would be followed. The milk from which these cheese were made is no better cared for than what our best farmers are doing for their milk. I saw the cows milked, and how they were handled, and saw how the milk was handled in the factory, and they are doing it exactly as we are doing it here, and it is absolutely necessary that everybody here should do it in the proper way. Bear in mind that you are in a partnership business, and if one man does something wrong the result has to be borne by the rest.

It is not only necessary that you should take care of your milk, but you should see that the other fellow does also, and you should pass such a resolution in every factory and instruct your makers to absolutely refuse to take any milk that is over 70 or 75 degrees. My own opinion is that it would have been far better to have started in a few years ago on this, than to have been spending years and a lot of money finding out how best to handle milk in different conditions. We do succeed in making cheese from this over-ripe milk, but it takes a lot more milk to make it, and the cheese are never so good. I think the time has come when the majority in the factory are doing what is right, and they can afford to stand up and say that the other man must do it or keep his milk at home. It is for you to say whether it should be done or not.

Q.—Will we have to cool the morning's milk?

A.—No, simply cool the night's milk; but it would not do any harm if the morning's milk were also cooled.

Q.—What temperature do you advise?

A.—Professor Dean said about 65 degrees. I will venture to say that prac-

tically every maker in this room will say that when the milk in coming in at seventy-five degrees, he thinks it a fairly low temperature and he does good work with it. When it gets up to 80, 82 and 84 and sometimes 86 it takes more milk to make a pound of cheese and the cheese is not so good. In June and July our cheese were giving a poor account of themselves in the old country. The majority of the dealers were taking them because they could not get anything else; but if there had been plenty of cheese in their own country there would have been something doing, and you would not have been getting 14c. The average quality of the cheese sets the price, and you should try and get the man who is not doing right to live up to proper conditions.

The prices we are getting are not the best prices obtainable for the best cheese, and we should try and get all our best cheese up to the best type. Get your milk in sweet condition. The average cheesemaker sets his milk over-ripe, and we cannot make a type of cheese such as we have here from milk that is over-ripe.

Q.—Don't you think competition is one of the great difficulties?

A.—I think it is by reason of competition that milk is taken in that the maker knows is wrong. What is the use of the government of this country spending thousands and thousands of dollars every year giving information, if the people just sit by and do the same thing every year.

Q.—How soon should the milk be cooled?

A.—Immediately. The changes that take place are brought about by bacteria and they require favorable conditions in which to grow. I have noticed that a great number of stands are located at the roadside, and there is a great deal of dust gets into the cans. I have often put my hand inside of a can and wiped it around and found them laden with dust, and there is no doubt we have always had the most trouble when it is dusty weather. In many cases the milk pails are left at the roadside and sometimes they are not washed at night. We have some factories not many miles from this district where we have had serious trouble, and it was impossible to overcome the difficulties when the weather was dry and we had dusty roads.

Mr. Hume: There has been trouble with yeasty cheese, and the cheese makers claim that it is not their fault. The milk has been received at the factory and the instructor could not detect anything wrong with the milk. Where is the blame?

A.—It is quite possible for the milk to be received and then develop a flavor, but the seeding must have taken place somewhere. Some person or persons were delivering milk at that factory that had the organism in it. All over this country there are what are known as "bitter yeast organisms." Where they come from we do not know. The milk might be cooled and the cheese maker not detect anything wrong with it on the stand, but when the temperature is high enough for these organisms to grow they will develop. Cooling will not rid the milk of the organism, you must find out the source and get rid of it.

Mr. Hume: Do you think any competent cheese maker should be troubled with that kind of cheese?

A.—When he finds any trouble of that kind he should at once try to locate it. He can have the instructor come to his assistance and he should find out the cause.

A Member: At the factory that I own we had trouble with floating curd last year, and the cheese maker suspected where it came from, so we made a test and located the trouble the first day. We asked the man to take better care of his

milk and cool it. The next morning the milk came back in fine condition so far as the cheese maker could see, and yet he had a floating curd that same day. On further investigation he found that the patron was milking his cows into a pail that had a cotton rag stuch through a hole in the bottom of the pail; when this pail was discarded we got rid of the trouble.

MR. PUBLOW: I do not know of any fermentation in this country that is harder to deal with. Dr. Connell says it is one of the most difficult forms that we have to deal with in factories.

Q.—If the whey does not go home in the cans what then?

A.—It is easier to locate it.

Q.—Do you remember a case we had and we did not locate it?

A.—Yes.

Q.—This summer there was not a sign of them?

A.—Yes, but the cheese had it all the same. They made an effort and got passable cheese.

A MEMBER: Apparently the people did not take any more care of the milk this summer than last summer.

A.—If the price of cheese had been the same as last year you would have heard of it. I got the names of every factory, the cheese from which I saw in the old country, and if I was to read the results to you it would set some of you thinking.

Q.— Is this trouble worse in some seasons than others?

A.—Yes.

Q.—When the milk was cooled down to 65 did you ever have any trouble?

A.—Yes.

MR. BARR: It is just dirt, that is all. This organism requires an acid to work in and it does not show until a certain amount of acid develops.

Q.—Had you the same trouble years ago?

A.—No.

Q.—Was the milk cared for in any better way then?

A.—No, I do not think it was cared for so well, in many cases; but the longer you are carrying on this dairy work the more likely you are to have ferments that will give you trouble. We have some factories in this district that are clean, and excellent cheese has been made in them.

A MEMBER: Six years ago they had yeasty flavor in a factory near to us, but it was two years before it came down to us. Mr. Publow went to the other factory, and he came down to me and he said there was only one cheese that had a yeasty flavor, and he told me to hold it for a week.

Q.—Don't you think this yeast germ could be overcome by stirring the curd before salting?

A.—You can get the cheese through.

Q.—You can make a cheese that will bore close?

A.—Yes. There is only one way that I have found of detecting that, and that is to cut your curd and examine it before salting, because you cannot detect it by the texture.

Q.—Would it not be possible for the instructor to grade the milk and pay the patrons according to the grade?

A.—I do not think so. The instructor is only here now and again. It should be done by the maker if it is to be done at all.

Q.—Some makers will favor a few patrons, and don't you think it would be better to have an independent man to do this grading?

A.—It would cost a great deal to have a special man there to do the grading. There are always some people who will be dissatisfied. If the factory would adopt a resolution that the patrons had to adopt the methods advocated by Mr. Barr and Mr. Ruddick as the best methods for taking care of the milk, then I think we would have gone a long way in remedying the defects in our cheese. Cooling the milk is not the curing of all, but it will go a long way in overcoming the defects in the cheese. The remedy is in the hands of the farmer, and if a few men will not do it, leave them out. You are better without them. The law that we have on the statute book to-day is amply sufficient to make every man take care of his milk, and the man who will stand out and refuse to do something, thereby wasting other people's products, can be dealt with, and your instructor is there to do it. Let us put into practice what has been shown to be the proper thing to-day.

Q.—Who is to blame for the bad milk in a private factory where the cheesemaker will not discard anything that is passed to him. Three quarters of the patrons may be sending their milk in proper condition; how are you going to get at the others if the cheesemaker will not act?

A.—The cheesemaker is to blame if he knows it, and the people are to blame for allowing him. Make it a rule in your factory that a man must not take milk in that way, and if he does then hold him responsible.

Q.—Who is to prove it?

A.—You can prove it by your instructor. If you find it is taking more money to make a pound of cheese then you know there is trouble. The farmers of this country cannot go on keeping cows and growing good crops to feed them, unless they can get the best prices obtainable for their cheese.

Q.—Do you find much trouble in September and October when the nights are cool?

A.—No: this year when the weather was cool you could not wish for better cheese. What happened when the weather got wrong? You had the same cows and the same people, but the temperature went up.

Q.—What is Mr. Barr's system?

Mr. G. H. Barr: I have been very much interested in this discussion on the care of milk, and I could not help wishing that I had my old lantern here so as to show you the slides on the care of milk. That subject seems to be a live one here, and I believe it is the greatest subject we have in connection with the cheese trade. I believe there is one greater, and that is the increased production per cow. Next to that comes the care of the milk.

Caring for milk is the simplest thing in the world. All you have to do is to see that the cows are healthy. Use reasonable care in milking them in a cleanly way, and as soon as you milk one cow carry that milk out and put it into a can that is set in a tub or tank of cold water, and keep on doing that until you get all the cows milked. Then put a cover on the can, and go away and sit down and have a smoke. That is just about all there is in caring for the milk and you cannot get any less expensive way.

Q.—Do you use water or ice?

A.—I would use ice if I did not have an abundant supply of water. If you have an abundant supply of water place your tub or tank between the water supply, or trough, and I would pump enough water for the cow to drink and let it run through. If you have not an abundant supply of water it is better to have some

ice, and if you use ice it is not necessary to have water flowing through your tank. It is not necessary to have an expensive tank. If you cannot get one cheap enough I would cut a barrel in two. I would have some place to put the milk can in, and I would put the first cow's milk in and I would change the water just enough to cool that milk to 65 degrees just as quick as I could, and I would put the cover on the can as soon as I was through milking. If you cool the milk to 65 degrees it would be delivered at the factory perfectly clean the next morning. If you have to mix the morning's milk with the night's then I would cool the night's milk down to sixty. I would not get up in the middle of the night to cool the milk for any man. Cool the night's milk when you have lots of time to do it, and if you deliver it at between 65 and 70 degrees it would be all right for the purposes of making cheese. If you have to mix in the morning's milk I would keep them apart as long as I could, and keep the night's to about sixty degrees.

Q.—Would it be any advantage to keep the milk in a cooler?

A.—If you have a nice clean place to keep it: but I object to using a cooler outdoors or around the farm buildings. There is no use in using a cooler; it is only so much extra trouble for your wife to wash it up. I would get a wire handle stirrer. You will never have leathery cream on your milk if you cool it in that way. I said that yeasty flavor was nothing but dirt, and that is all it is. Where they have it you can be assured that there are some dirty people in the neighborhood. You will get this yeasty flavor from rusty cans and from cans that are not properly washed and scalded.

You may cool the milk down and deliver it to the factory in such a condition that the majority of the makers will be willing to receive it, and yet that flavor will develop. There is only one thing to do to prevent it, and that is to pasteurize the whey. I know one of the best factories in Canada, and one of the cleanest men in Canada. I do not think we have anybody who keeps his factory cleaner, and his men also, than did Ted Johnston. They hired a man every morning to clean the factory, and yet they had yeasty flavor from May to November. They commenced pasteurizing the whey three years ago, and I saw Mr. Johnston at the last convention and I told him he was getting fat, and he said "No wonder, I have no yeasty flavors now." The yeasty flavor may get into a clean factory where there is a clean maker, but it is quite easy to remove it by pasteurizing the whey. If you cool the milk down and keep it clean, and have everything all right, it is not necessary to pasteurize whey.

Q.—If the milk is cooled down and delivered to the factory cooled, is it not possible for the germ to develop when it is heated up?

A.—The germs that develop when it is heated up are germs that should never have been in the milk and they have got in it from the time it was drawn from the cow until it was delivered at the factory.

A MEMBER: A few years ago I had some trouble with the milk. It seemed to be getting worse each time, and I called the patron up on the telephone, and I asked him what he had been doing and he said he had been away, and it was neglected more than usual.

MR. HUME: Our factory is just as clean as that man's you talked about, and yet we are bothered with yeasty flavor for years. We can take you into the stables of our patrons, and they are as clean as any stables in the Dominion of Canada.

MR. BARR: I would pasteurize the whey and clean it up. When it once gets into the factory it is almost impossible to get it out when the whey is going back in the cans day after day. By pasteurizing the whey you check it at once.

Q.—If the whey is not drawn home in the cans?

A.—Then it is due to some germ in the milk cans or in the vats.

Q.—Or something else?

A.—What else could it be? It is in the milk and it is a germ that develops in the milk after it is taken from the cow.

A MEMBER: After all the experts have worked on it it has puzzled them to find it out.

MR. RUDDICK: The germ has been isolated a thousand times, and the actual cause has been discovered. It is very well known that if the cans are clean it cannot grow in them, and if the milk is cooled down it will not develop in the milk.

Q.—What is the expense of pastuerizing the whey?

A.—Most factories are paying 60c. to $1 per ton of cheese. There is nothing you can do better in order to have good cheese than to pasteurize the whey.

Q.—If the germ comes from other sources, how are you going to get rid of it by pasteurizing the whey?

A.—I am taking it for granted that the people will look after their cans—if they have dirty cans they will discard them. You can squirm as much as you like, it is dirt, and if you get rid of the dirt and pasteurize the whey it will overcome the difficulty.

A MEMBER: I do not think it is possible to pasteurize whey for 60c. to $1.00 per ton. I do not think it can be done.

MR. BARR: That is what it is costing, and that is what the people are paying.

A MEMBER: In our factory we pay a maker 5c. per 100 lbs. cheese extra for pasteurizing the whey. We made a trial for three months, and at the end of the time they all asked the maker to continue pasteurizing.

Moved by J. J. HOGAN, seconded by JOHN J. HUNT, "That this Association recommend that all milk delivered at the cheese factories be cooled in the evening at time of milking, by having the can placed in cold water and ice to reduce the temperature to 70 degrees, and that the mixed milk be delivered at the factory at a temperature not exceeding 75 degreess." Carried.

THE NEED OF DAIRY EDUCATION.

A. D. MCINTOSH, B.S.A., DISTRICT REPRESENTATIVE, STIRLING.

Standing before such a large audience, I find it perhaps a difficult matter to say a few things to you on a subject which seems a little out of place when we consider that the people who are here are not those who need dairy education. I am going to take the liberty of changing the address a little bit, and make it not so much "The Need of Dairy Education," but "How to Apply the Need of Dairy Education."

After the able and excellent addresses we have heard on dairy education at these meetings, the people here have not very much further need of, or very much more capacity to hold, any more education on dairy lines, and I think it would be just a little out of place for me to stick strictly to the text.

We have in Canada an unparalleled system of education, and this system of education has been looked upon by all the nations of the earth as a sort of model upon which to frame systems of education for their countries, but as you all know—particularly you people who have sons and daughters who have grown up, and who

have not entered the professional world or the business world—the education which has been received by these sons and daughters in the past has been of such a type and of such a nature as warranted them in leaving their good substantial and hard-earned homes on the farm. I say the time is ripe when this condition should be changed. I am proud to represent one of the first and strongest moves which have been made by our Provincial Government towards correcting a system which has already been going too long in the wrong direction.

It gives me a great deal of courage and a great deal of pleasure as well to be engaged in this work although it is attended with a lot of hard labor. This movement which is being augmented and enlarged upon in many ways, was started through the instrumentality of Dr. Creelman, Professor James, and other men who represent the Agricultural educational interests of this fair Province of ours. I refer to the appointment of the district representatives in different parts of the Province. I take no credit to myself for having been appointed, but I take a good deal of pleasure in being one of those representatives, and I hope I may be spared to act in that capacity so long as I am doing service to the people such as I see here to-night, the farming community of this grand Province.

When I get out among the farmers and have heart to heart talks to them about the problems which they have, I feel right at home with them, and I am glad to say they feel at home with me and they always ask me to come again.

One of the difficulties which I had in starting the work in Hastings County was that a number of the farmers wanted to make me real estate agent, and wanted me to get them buyers for their farms. But in many instances those very people who wanted me to get a buyer for their farm when I first came there, will not now sell their farm, and that is one of the results that is already to be seen of the work which the district representatives are able to do among the farmers.

What has that got to do with dairy education? It has a good deal to do with it. If we cannot keep the farmers on the farms, dairy education would not be of much use. I contend that it is our boys and our girls who require to be educated more than the farmers. So far as dairy education is concerned, I contend that the public school and the high school are the places where every branch of it ought to be taught, and where it can be taught, and I am proud to say it will be taught there, for we are going to start on Monday next in the high school at Stirling with quite a large class. If I were to go out and make a strong canvass for students, I could fill the entire school with them for the special purpose of studying the principles and practices of up-to-date farming. Already we have more students than we know what to do with, without canvassing for them at all. This shows that the people are wide-awake and alive to the educational interests of the boys and girls who are growing up on the farms.

I have been working to a considerable extent in and through the schools and have succeeded in arousing considerable interest among the boys and girls of six and seven and ten years of age in this very same problem, and I hope to interest our fourteen and even forty-year old boys in the high school. You cannot tell me that you cannot teach lessons in dairying or any other agricultural subject to boys and girls from six to ten years of age, because I have done it successfully, and lots of other teachers have done it. The big difficulty is that we have not been training along these lines sufficiently. I contend that I can take a dozen test tubes of milk before a class of public school children and by allowing the children to help me, I can teach them the very lessons that Mr. Publow and Dr. Publow, his son, and several other speakers have been trying to teach the grown-up men at

these meetings. I can teach it to these children in a way that they will never forget it.

The new move which the Department has made of introducing agricultural education into the high schools by placing on the high school curriculum agricultural subjects instead of some other subjects is a long step in the right direction, because these students will get more or less training in that particular. In the Normal School they will get further education, and then they will be turned out as public school teachers with agricultural training, and you need not tell me that a wonderful revolution among the boys and girls will take place.

Agricultural education is needed in the public schools if it is needed anywhere. It is all right to instruct the grown boys and girls in branches of agriculture, and particularly that of dairying, but I say that the work will be more efficiently taught and more successfully taught by the introduction of agriculture on the high school curriculum, and thereby send out teachers who will teach it in the public schools.

As you have Dr. Creelman and the Hon. Mr. Burrell, Minister of Agriculture for the Dominion, present to-night, I think it would be wise on my part to make way for these gentlemen to address you. They have come a long way with a message to you. If at any time you need my services either in a public way of this kind or in a private way to help discuss some problem that you have on your farms, I am always on hand and shall be only too pleased to assist you in every way.

Before closing, I wish to thank the Dairymen's Association for the opportunity they have given me of making known my position as a teacher of agriculture to the public, and when I say a teacher, please do not misinterpret that. I am nearly always understood as the agricultural instructor of the Stirling High School. The truth of the matter is I have been there about two months and a half, and have only given one or two lectures in the high school. Next week, on Monday, we will open a six weeks' short course in Agriculture, and the last three days of that course, the 14th, 15th and 16th of February, will be a live stock and seed judging course, conducted in a large tent near the high school, to which all the farmers of the County of Hastings are welcome. So far as our six weeks' training is concerned, anybody is welcome to come up at any time and investigate and take part, and I will only be too pleased to see any of you there. (Applause).

ADDRESS BY G. C. CREELMAN, LL.D.

This address will be found in the report of the Western Dairymen's Association.

The Chairman (J. R. Dargavel, M.L.A.): I am sure we have been pleased and instructed by the remarks that we have heard from Dr. Creelman. He has told us of what they are doing at the College at Guelph, and I know from personal observation that he has not over drawn the picture. In this County of Northumberland surely there are many who have sons and daughters who would be better qualified to take up their duties in life if they had a course at the Agricultural College. If some of us do not profit by that address any more than by having our ears pleased, it will not amount to much. I hope it will sink deeply into the hearts of the people, and that you will make up your minds that your sons and daughters will be better by having a course at that excellent college.

I am sure that you are very much pleased to note that we have with us to-night, the Hon. Mr. Burrell, Minister of Agriculture for the Dominion of Canada,

(Applause). We have heard many good things about the honorable gentleman, and how well fitted he is to take up the work that he has been called upon to do and that he will fill that position ably. I regret that he has not been able to be with us the last two days, so that he could have heard something about the work that is being done by the Dairymen's Association. We hope and trust that he will extend to us as dairymen the aid that we so much desire. It has been a reflection on the Department of Agriculture for the Dominion in the past that the people have not received the aid, nor has the money been spent in that Department that we think we are entitled to. They have not been spending as much money on agriculture as has been spent by the Province of Ontario. We hope that is going to be remedied in the future and that our new Minister will see that our wants are looked after. There is no way in which money can be better spent than in the promotion of agriculture. Since I have had the honor of a seat in the Legislature, I have tried to impress that point on our Ministers at Toronto, that it does not matter how much money the Department of Agriculture spends so long as it is spent wisely—that the people of this country, irrespective of their trade or calling, whether merchants, professional men or farmers, will stand by the Department of Agriculture in spending money so long as it is wisely spent. I do hope and trust that our new Minister will see that we secure all that the finances of the country will permit.

ADDRESS.

HON. MARTIN BURRELL, MINISTER OF AGRICUTURE FOR THE DOMINION OF CANADA, OTTAWA.

When the Hon. Mr. Burrell rose to address the audience, he was presented with a beautiful bouquet of lilies of the valley and carnations by a pretty little girl of the town of Campbellford. He said as follows:—

Might I be permitted to say that, metaphorically speaking, I take off my hat to the Eastern Dairymen's Association, in recognition of an Association that has done an invaluable service, as I know well, for the agriculture of Canada; an Association that has based its scheme of operation and created its success on that great enrichment of agriculture on the farm, that great mortgage lifter, that most useful of animals, the cow. There may be a more useful animal, but I have not yet heard of it being created.

It is nearly 300 years ago, as some of you know, since the first domestic cattle were introduced into Canada, into the old Province of Quebec. It is practically 200 years ago since the first domestic cattle were introduced into Upper Canada, although we can date the first coming of any serious character, of domestic cattle into Upper Canada—into Ontario as you know it—at the time of that great influx of the United Empire Loyalists, about the year 1783. We must all recognize among other invaluable things that that great body of men who came out in those days into this northern wilderness brought with them that most useful thing, the cow, who is the progenitor of the cows of to-day.

I do not want to speak to-night as an expert to experts. It would be a work of supererogation if I did. It is interesting to know in connection with your own Association one or two things, and one is that it was practically 100 years subsequent to the time I have just mentioned when you in this Association, introduced

into your own Association instructional work by a qualified Canadian, heretofore having had to draw from other sources. I refer to a man who did invaluable work for the Eastern Dairymen's Association, Mr. James Whitton, whom I regret deeply, passed away only a few short months ago, lamented not only by a large circle of friends, but by many others who value the progress of the dairy industry in Canada; and who, I understand, although I never knew him personally, was esteemed as a man of great personal worth, and who, in respect of the work he accomplished along these special lines, deserves a monument far more than many men who get monuments in our country. Considering that you only practically started your Association in 1877, although it is a good long while ago as we count years, it is marvellous what a record you have made and what work you have accomplished.

I had the curiosity to look up the figures in connection with the exports of that day and the exports of this, and I find that Canada, in 1877, exported in dairy products $6,822,000 worth, and that to-day in the year 1911, the estimated export is $24,761,000. That is a pretty good showing for you who are engaged in a practical work of this country, for the country and for yourselves.

I have said I am not here to speak at all along the expert lines of your own business. I would not dream of doing that, and I know perfectly well you have had a great many admirable addresses. It is a regret to me that time would not permit me to hear many of them, as I have no doubt I should have received a lot of benefit. I may say that although it is possible—and one hopes that the new Government in the course of time will be able to do possibly still more than has been done—I am not here to criticize the work of my predecessors. In fact I can recognize that in many respects the Department has, during the last fifteen years, done a great deal of helpful work towards the dairying industry. You have had with you to-night experts from our own Department, like Mr. Ruddick, and I understand Mr. Grisdale, and many others, and I think we all ought to recognize that we have in the Department good, efficient men who are anxious and earnest in doing good and efficient work, and I hope that will be continued.

Sometime ago I remember hearing the story of a young fellow who had just graduated in law and he asked his father, who was an expert in law, what line he should speak along before the court on his first case. His father said: "Is your case very strong on law? If it rests on law, then you should uphold the majesty of the law and argue before the judge that the law must be sustained. If your case is not strong on law, then you must hang out for justice, and plead that justice must be done though even the heavens fall. If your case is not strong in either law or justice, then you had better talk around it." (Laughter.) And that, Mr. Chairman, is what I am going to do to-night. I am going to talk around the whole subject, and explain to you that I am here for the purpose of showing my practical interest in the work of the Dairymen's Association, and to assure you that I have a strong sympathy along the lines that you are working on and am anxious to assist you in any way that I possibly can.

I want to say that although it is true I am not an expert dairyman or cheese-maker, I do not want anybody to be under a false impression and think I am not a farmer. It so happens that the particular branch of farming which I have carried on for about twenty-eight years past, sixteen in Ontario, was very largely along fruit lines, and I have for that particular branch of agriculture—horticulture—which I have always been engaged in specially, a great liking. I do not know why the claim of the orchard could not be put forward as clearly as the claims of the cow. At all events, the original settlers of this country and the men who made

out of the wilderness the farms of to-day, in both these respects, did great work. First of all, they saw that they could make a possible living and then they planted a few apple trees and when they struck their roots down into the soil, there was a right rooting of the man to that home spot that he had created in the wilderness. It became a real home, and it did something for creating associations of the past as perhaps nothing else ever did. When he got his orchard and his few cows, he felt that it was in every sense a home, so that after all the cow-man and the fruit-man have a good deal of sympathy with each other.

In our particular branch of fruit farming, our aim is to keep the cow out of the orchard, which is too often the great rendezvous of the cow, and means poor cows and poor orchards. While I am speaking autobiographically for a few moments, I think I may fairly claim to have gone through all the phases of farm life in Canada. I have gone through the trying days, and, after all, unless a man has gone through some of these days and has met some of these difficulties and trials that we have to contend with, he is not as good a man as he otherwise would be. It is not a bad thing to be harassed and in debt, but if you are going to make a manly and earnest effort to get out of debt, although it is a hard task-master, sometimes it is the very best a man can have. If a farmer begins with a big mortgage, he should go from the big mortgage stage to the little mortgage stage, and from that to the no mortgage stage, and dairying and fruit growing always accomplish that.

I have learned a great deal during my twenty-eight years of farming, and perhaps in respect to dairying, I have learned more than a dairyman would of fruit growing, because there are any number of farmers in this country that know little or nothing of fruit growing, but there are not many fruit farmers who know nothing of dairying and general farming, because they have to. I can assure any skeptical gentleman who may be present to-night, that I know the swish of a cow's tail on a hot night when the flies are bothering and you are in a hurry to get through the milking. I am afraid I have done my share in using "cuss words" on such occasions.

One of the first jobs I was ever put at—for I was not born to the farm—was pounding away for about an hour and a half on an old dash churn in the hopeless task of bringing the butter. Some of you remember those days. I graduated from that. In fact I may say that in my old district I was the first to purchase the then new device of the Daisy Churn. The very glib-tongued agent who sold me this Daisy Churn told me at the time that if he could sell twenty of them in my district, he would present me with a cow. Daisy Churns were dear and cows cheap. He very soon sold twenty, but I never got the cow and lost some faith in the commercial honesty of Canada.

I learned a good many things in connection with dairying in a small way. I learned that in dairying you had to do your work thoroughly. I learned that in milking you have to do it thoroughly. I learned that kindness was worth everything else in dairying. I learned that kind treatment to the animals would do more than anything else. You have to mix kindness with the balanced ration and with everything else you may do. You have to begin well and finish well. If you do not finish your milking well and do the proper stripping, you soon get a dry cow. It does not matter so much how you do your middle part so long as you begin well and end well. They say that it is a very good thing in a speech, and that if you begin well and end well, it does not matter a hang what you put in the middle. I am about in the middle now, as you can understand. (Great laughter). I would not like to say that that applies to everything in life. For instance in packing a

barrel of apples, I have noticed some men begin well and end well because they are afraid that by mistake, the barrel might be opened at the wrong end. They shove anything in the middle. That does not do, and perhaps it might be safer to say that it is better to do the whole thing well from start to finish.

I learned another thing, and it takes me back to the old days when I was interested in cattle. I am speaking now of twenty-five years ago. All the farmers in our district did not believe in special breeds, and they had a great idea of the general purpose cow. At that time a man would not buy anything except a cow that, when she had a few years of usefulness in milking, could be turned into beef. They had a vague impression that they were going to get a lot out of her as beef. I gradually learned that this was a fallacy, but I had to learn it by painful experience. I had one great, big cow that gave very little milk. When I was fattening her she looked so big that large financial hopes filled my mind, but the result was that I got about half as much as I would have got for a real beef animal, and the loss of milk during her milking period was considerable.

One thing I learned during the many years of the harder part of my farming life was to have a great big sympathy for the man who was struggling along on the lonely farms all over Canada. I have been over a good part of Canada, and I think I have seen some of the strenuous, unremitting toil of these men and women under difficult circumstances who were building up, after all, Canada in the biggest sense of the word, who were laying the foundation for national greatness. They very often worked under most discouraging circumstances, and sometimes failed through no fault of their own. I think the man who does not appreciate that and who has not, to some extent, been through the mill himself even if he achieves success, is not in a position to give any real practical sympathetic help to others later in the day. I think it is well for us, whatever success we achieve, or however cocky we may be about our achievements, to keep always an open heart and a generous sympathy for those who may be less fortunate than we are at that particular time of day.

During the last twelve years, my lot has been cast in very different circumstances. I have lived out in that far-off western Province of British Columbia, with which, possibly, many of you may not be familiar. We are not a dairying country as yet; in fact, in many ways, we are not what you would call an agricultural country, although we are becoming more so every year. We have, as many of you know, a country of exceptional difficulties to found a good farming industry. We have scattered valleys between immense ranges of mountains, very difficult transportation, embarrassing conditions for settlement, great obstacles in the way of timber clearing, enormous forest growth and in the semi-arid portion we have great difficulties through the absolute lack of the necessary rainfall and therefore, have to make recourse to irrigation. When I went out there in 1899 to follow my old branch of fruit growing, after having carried it on here for some years, the fruit industry of that country was practically a bagatelle. We only had about 7,000 acres of orchard in the whole Province, and practically all our men were new at the work; but they were men who were at once prepared to adapt the very best and most scientific means they could get, and they went into it thoroughly. Men became so convinced of the possibilities that it would pay in the long run to overcome the difficulties they had to contend with, that they have prosecuted the development of that country to such an extent that to-day, in fruit-growing alone, we have, in the space of ten short years, increased that 7,000 acres of orchard to nearly 120,000 acres. That is something that should be gratifying to you in the East, because, after all, it is part of Canada.

In a general way, we have also developed our whole farming industry. Only a few short years ago, we were producing hardly anything at all. In fact, in 1909 we only produced about $8,000,000 worth of general farm products; but we made such advances that in the following year, we jumped up $6,000,000 and produced $14,000,000 worth of farm products. Yet, in spite of that, we had to import $14,000,000 of products for our own consumption, largely in the way of dairy products, much of which came from Eastern Canada. We also had to import hay and grain. If you could get the price for hay that I have seen paid in the north part of my riding, you would rush from dairying into hay. I have seen hay sold at $84 a ton. That price is simply an indication of the difficulties under which that hay was raised. I am speaking of districts 200 miles north of the railway in the big mining sections where there is a comparatively small area of land to be cultivated and where everything had to be freighted by six or eight horse teams, costing from 4c to 6c a pound for freight charges.

The very briefest description of the geographical character of our Province would show you under what extreme difficulty we are trying to carry on agriculture, and would convince you that the work we have done has been of real benefit to Canada. After all, anything that develops the agriculture in that far West or the Middle West, and does it along scientific lines, must command your sympathy in every way. Here in the East you have been at it for years and years, have carried your work to such a successful enterprise as we have seen here to-day.

I suppose I cannot help speaking from a sort of official point of view. From being a private member or a fruit grower, working twelve hours a day, I have graduated into a Cabinet Minister working about seventeen hours a day with a "quick hand-out lunch" in the middle of the day because there was not time to leave the work. There are some people pessimistic enough to believe the world is not growing better, in fact, they think it is growing worse. I suppose you have such people in this enlightened district, people who have no ideals in life, and who are like the Irishman who said with regard to his pig when it was killed, that it did not weigh as much as he expected, and he never supposed it would. (Laughter.) This class of people you find, think the Government should do everything for them, and they should not do any work for themselves. I am a firm believer in the fact that the world is getting better, and getting very steadily better. Not so very long ago the moral qualities of countries and nations were not as good as they are to-day. It is not so many years ago, if you went into the old city of London, England, you would see a sign up outside of a public house: "Drunk for a penny. Dead drunk for two pence. Drunk with straw to lie on, three pence." We have graduated from that stage at least, and we have got over that kind of thing. It does not matter what phase of life you look into, or what department of life you are in, any careful student of history, any man who looks intelligently into the useful life of the people of this continent or the older continent of Europe for the last two or three hundred years, cannot fail to come to the conclusion that the asperities and ills the wretched conditions of life have been ameliorated in every direction. There has been a great uplift in the public standard and the conditions of the people from the highest to the lowest, and in every direction the world is steadily progressing. Life is generally getting better. I do not believe there was at any time in the world's history a period such as this that we are living in, when a man could so fully reap the reward of his own intelligent activity, or have so full a scope and such freedom to make the best use of what is in him as there is right to-day in 1912 in any country or any district.

One thing that strikes one is the vast mass of reform work along every line, industrial and social, that is being done by what one might call, private initiative, by individual effort, by unselfish, enthusiastic men who have seen the right path and who have determined in so far as their efforts permit to work along right lines, and they have gradually brought around their neighbors and communities and countries to their point of view. It is a mistake, after all, therefore, to think that Governments can do all these things, and it would be a most grievous mistake for any Government to attempt to do the class of work that would in any sense destroy private initiative and private enterprise. I think we should all agree upon that.

The very best way in which we can help anybody is to help him to help himself. (Hear, hear.) The very class of work our friend Mr. Creelman has been speaking of, and the excellent institution of which he is the official head, are the most direct proofs of the fact that the very best way in which you can help any industry in any country is along educational lines. If you can teach a man to help himself you are doing infinitely better work and more efficient work for the State and by the State, than if you spoon-fed him. Therefore the valuable character of the work being done by such institutions as the Guelph and Macdonald Colleges and the Truro College in Nova Scotia, and other institutions of this sort, cannot be over-estimated or over-encouraged.

The Government, of course, can do something and ought to do something, and it is just as well to know what they should do and what they should not do. They certainly have done a great deal of work in this country, speaking from an agricultural standpoint. I recollect in my earlier days in Ontario, the invaluable work that was done along strictly educational lines by the old Farmers' Institutes. I do not know to what extent it has kept up in Ontario, because I have not been in touch with it lately, but I do recall the earlier years of that work, and the invaluable work that was done and the difficulties under which it was done.

In the first place, I remember the scoffing with which work of that kind was met. I was an Institute worker for years myself, and I have been practically all over Ontario. I was in this very town of Campbellford in the early nineties, and I was in touch with the general condition of those days, and I remember clearly what they were. I remember distinctly the vast improvement that took place directly, as a result of the Farmers' Institute Association of those days.

I remember the time that if a man went on a public platform to speak to farmers, if he wore a white collar he was looked upon with great suspicion as being a theorist, because it was not considered that a man who wore white collars and cuffs could be a practical farmer. Those days have passed. We have learned the fact that a farmer can dress as well as anybody else and has a better right to. (Applause.) Every man dresses for his work, and there are a great many lessons we ought to learn along these lines.

Amongst the difficulties we had to contend with, there were two outstanding ones that I particularly want to refer to, because Mr. Hodson, I remember, complained very strongly to me of his difficulty in selecting speakers. First, he wanted to get a successful, practical farmer who had carried out in his own work on the farm, strictly scientific principles lying at the base of agriculture. But the difficulty was you had two types of men. You had the good solid, practical farmer, the successful one, who on the platform was not worth powder and shot to blow him off, because he could not impart his ideas to the rest of the people; or else you had the windbag who could talk by the hour and whose farm when you came to examine it, was a standing disgrace to the whole neighborhood. The man who knew could

not tell the other fellow how to do it, and the man who "knew all about it" never carried it out, and everybody discounted everything he said no matter how good it was. These, in the old days, were some of the very great trials in connection with the work. Nevertheless the work went on, and there was a great deal of a practical character taught, and there was also a great deal learned by the speakers themselves. We had to learn, the farmers had to lean, the chief lesson and the first lesson, the reconciliation of science and practice. Gradually that question was solved, and the work carried on in Guelph is one of the great ways of showing clearly to the people of Canada that successful agriculture can only be followed by a thorough grasp of the scientific principles that lie at the basis of the whole thing.

We used to learn a thing that I suppose you have all learned here, and perhaps I ought not to use an illustration, because I presume you are all well posted. There may be a few men who do not know everything. We learned this very valuable lesson in life that you can always be taught something by every man you meet —something useful—and the man who gets to the top of the ladder in time, is the man who tries to learn something from every man he comes in contact with. One of the most foolish ideas that ever existed in any man's mind, is that if he knows something which he thinks somebody else does not, he should lock it up in his own bosom. We have always found in our far Western country, as you have found in the East, that the wise man and the public benefactor, is the man who having discovered something to his own advantage imparted it to everybody else, because what was good for the whole community was for his good also.

Perhaps, nationally, we ought to bear that lesson in mind. When a man knocks around all over Canada, he begins to realize that Canada is bigger than any one province. I was in the Province of Quebec a little time ago, and there are many people in Quebec who know very little of the country beyond the confines of their own Province, and they are apt to see in a provincial way and not realize what is going on in the whole country. Even in Ontario which considers itself—perhaps rightly—the "Banner Province," there are lots of people who know absolutely nothing of the conditions in Quebec and little or nothing of the conditions of the far West. It is time, therefore, as Canadians, whatever branch of work we may be in, that we should try to get an intelligent grasp of the condition of the whole of Canada, and then we can be Canadians in the biggest and broadest sense of that word. We even ought to go a little further than that, and nationally we ought to try to get some intelligent grasp of what other counries are doing.

It was rather a surprise to me a few years ago, when it fell to my lot to go back again to the old country, which I had not visited for twenty-two years. I happened to be reared in Berkshire, a pretty good farming county, and the one that gave you the best breed of pigs you ever had, with all due respect to my Yorkshire friends. I got a little bit rusty with what England was doing. We began to think England was played out and Canada was the whole thing. I meet people in Canada now who think the people in the old country are not awake. It was rather an eye-opener to me to get back in the county of Berkshire and find one man farming 7,000 acres of land and milking 3,000 cows, and when I came back and told some of my people here, they thought it was a colossal lie. The thing was there: I knew the man, I knew the land and had seen his cattle. It is an actual fact, and to-day we ought, in our conception of things, to try and realize what is being done in other countries. Of course, England cannot feed herself entirely. She cannot do as we ought to do with our great, broad acres and resources, and are not doing to

the extent we ought to do. Yet, England under the tremendous difficulties that she has, is doing the most notable work even along agricultural lines. I need hardly say to stock men that after all some of the finest cattle and sheep and other animals in the world have been brought and are being brought and exported to all parts of the world from England.

England to-day is producing not only thoroughly good cattle, but occasionally, in spite of the fact that they are saying Englishmen are not wanted, is occasionally breeding good men, too. (Great applause.)

In connection with these old Farmers' Institute Associations, I happened to be glancing through a paper, and I came to the market quotations on dairy products. One statement was: "Cheese, strong and a tendency to become higher," and I was just thinking what an admirable description that would have been with my experience at the old hotels in my Farmers' Institute work, throughout Ontario, of the butter—"strong and a tendency to become higher." I happened to have rather a weakness for butter, and I used to travel around with a lot of Institute speakers, and a great many secretaries, and I only remember one man, whom we used to call Sandy McLean of Carleton Place, who could eat more butter than I could. I must say it was a pretty hard task. The quality of the butter to-day is an indication of the tremendous steps that have been taken in the dairying industry both by your own initiative and by the help of your Association and also by Governmental assistance to some extent, and by educational work. It is an evidence of the great advance that has been made in this land.

Now, you have placed before you on the hotel tables creamery butter which, compared with that old article I have just referred to that was placed before us twenty-five years ago, is certainly "a thing of beauty and a joy forever."

Speaking more particularly of the way in which the Government can assist, I might call attention to the fact that it was not until 1899 that the Government practically took any action at all in connection with assistance of a large kind. In the year 1899, a conference was held, the result of which was, as some of you remember, the appointment by the Government of that day of my old friend Professor Robertson as Dairy Commissioner. A great many of you are more familiar with his work than I am, but he did accomplish, as you know, an enormous amount of good for the dairying industry of this country. We are glad to recognize to-day that Professor Robertson is amongst us doing equally good work in other lines. I see him almost every day. He is just winding up his labors on the Technical Commission which, after a long survey of the conditions not only on this continent but in Europe, has acquired an enormous amount of knowledge of immense use not only to the industries and arts and so on, but also to agriculture, and the country will get the benefit of that in a few months.

As you know, the Department over which I have the honor to preside has been in very close touch with your own special work of dairying by helping you in connection with cold storage, and in particular with what I wish to speak of, namely, the record of performance and cow testing work. Dr. Creelman referred to that just now. It is an example of the extraordinary value of special lines of work by private enterprise or association or governmental assistance. After all, what does this mean? It simply means that by an intelligent grasp of the scientific principles of feeding, and by the elimination of the inferior animals, you can practically revolutionize your industry and your income, and that is everything.

In the old days when I was in Ontario, no man knew what one particular cow netted him; no man knew what one particular portion of his farm owed against the

other. It was all haphazard business, with the book-keeping very rough, if any at all. It simply means that you can eliminate everything that is not paying you up to the top notch, and everything in connection with your dairying industry or in connection with your general farm work should be eliminated that is not giving you good returns and a good surplus. I think if we applied that to every relationship of our life and every phase of our farm work, we would, all of us, be a great deal better off than we are to-day.

I know we could in connection with our own orchard work. I speak of fruit because it has now become a national industry in Canada. I do not know how many of you are familiar with its importance. There are something like 530,000 acres of orchard in Canada, and at the very least computation I would put the value at $150,000,000. And when you realize that in addition to the orchards, the amount of extensive work and labor that is employed and the subsidiary industries and various ramifications such as feeding the transportation companies, evaporators, canneries, etc., you begin to realize that it is a pretty important branch of agriculture.

There are very few men who realize that they ought to have a record of the performance of their orchards, and the general farmer who is carrying on fruit growing is making a big mistake if he does not get some systematic knowledge of what his orchard is doing and what it ought to do. If he did, he would be simply amazed at the financial results he could get from his orchard. It is true, therefore, that in every line of our work, the same principle applies, and that we ought to carry out a record of the performance, and if a particular branch is not profitable and is not doing what it ought to do, cut it out and put something better in its place that is good.

Let me assure you that any man who is a Minister of the Crown, and especially who has been fortunate or unfortunate enough to be entrusted with the Department of Agriculture, could not fail if he has any earnestness at all in him, to be affected by the tremendous responsibilities of that position. Sometimes they rather stagger one. We know that the agriculturists of the country expect a great deal. They rightly expect a great deal. They do not perhaps always have a true conception of how they can be helped, and you will permit me to say that it is a very difficult question for a Government to know just exactly how they should help.

Certainly one of the ways is along the broad line of a sound educational scheme, and in connection with that this very question of the record of the performance of work is certainly doing good work. There is one thing I want to say, and that is that we in Canada have not yet got up to that stage to which we ought to get, namely, that we should realize that every man who goes into the public service should go there with efficiency as the main test of his work. I know the great difficulties of these things in politics. We are all engaged in political work. We have in Canada the party system, and with all its faults it is probably the best system of Government. At all events we are governing ourselves, and we have carried to some extent our political evolutions and political views perhaps into every phase of our life, more perhaps than we should.

We should try to remember that no man should enter the public service of Canada unless he is qualified for the particular work he is called upon to perform for Canada. That should be one of the principles which should be laid down, and we should stand by it; that men are not supposed to be politicians when they are actively engaged in the public service of the country, and that the first consideration should be efficiency; that is, a man who is going out to teach others should be in a

thoroughly good position to teach them along right lines, because, after all, gentlemen, there is nothing so fatal as misdirected energy. I do not think there is any greater tragedy in life than to see people in various occupations, including farming, striving day and night, working themselves almost to death, harassed with anxiety, working steadily, working incessantly and conscientiously, but working futilely, because they are working with misdirected energy. Therefore, it is a public duty for all of us to see that those who are entrusted with governmental work should have such thorough qualifications that they can instruct others along absolutely safe and sound lines.

I had one very pathetic letter from a man applying for a position, and he detailed the position and he said, "I think this position would suit me." He did not say whether he would suit it, and that was my point of view. I would like not only to suit him, but I would like him to suit it. Everything being equal, we may give things to our political friends, but we should try and see that the people of Canada are served efficiently and well by the public servants of Canada. That, I think, we should all do. (Applause.)

I have nothing definite to say to you on behalf of the Government in connection with your special industry, except this: that I may assure you that in the right honorable gentleman who is at the head of the present Government, you have a man who is in thorough sympathy with the great basic industry of agriculture. No one is more thoroughly ready than Mr. Borden to recognize, not only the great value of agriculture and its being put on right lines, but the work that is yet to be done. In every legitimate demand of agriculture on this Government, you may count on the faithful and sympathetic co-operation of the gentleman who leads the Government of Canada to-day.

I do not think it ought to be necessary to assure you that you certainly have my sympathetic co-operation. How that help and assistance that you may wish for can be given to this industry as well as to other industries in connection with agriculture, of course, is a very broad and very deep question. My own feeling is this: that although many people may expect to see many things done and done in a hurry, speaking now as Minister of Agriculture, my impression is that it is better to move slowly than to move wrong, and that it is in the real interest of agriculture to take such steps as we can only after assuring ourselves that we are moving along right and permanent lines. I can assure you, gentlemen of this Association, and others who are interested in other branches of agriculture, that it is the earnest desire of myself and my colleagues to study this whole question of agriculture, not only in this Province but also in the far West where there are many problems to meet, and in the far East, and to devise some broad and practical scheme by which we can, in conjunction with the Provinces, work along such lines as will lead agriculture up into even higher lines than it has already reached. That is our earnest desire.

I might point out what is obvious to my friend, Dr. Creelman, and to other gentlemen amongst you who have studied this thing at all, that there has been in the past and that there is to-day, not only in the Dominion but in the Provinces a great deal of over-lapping, and a great deal of work being done by someone in one place that someone else is doing in another place, when it could be done by one effort and done thoroughly, and the other people could be doing something else. This is true even in the individual Provinces, and it is true as between the Federal and Provincial efforts. I think and believe that it is the wish of the various Provincial authorities as it is the wish of the Government of the Dominion, to try

in the future to cut out as many of these phases as we can, and to try to work together along harmonious lines, avoiding over-lapping as much as we can and to work with the sole aim of efficiency along the lines on which we do work.

It is impossible to pronounce any definite ways in which the Government may propose to help you. Certainly, if there was any criticism of the past Government it was that it was too niggardly, and we believe that in the main, that the House and the Dominion would bear with some equanimity more generous recognition of the claims of agriculture in comparison with the claims of every other industry in Canada. We recognized that in opposition, and we recognize it now that we have the responsibility that is upon us. I am not here to say that we will immediately do that, but I am prepared to say that we will just as soon as we can move along such lines as I have indicated to try and devise ways and means in which we can more generously assist the great industry of agriculture.

I can only say in conclusion, that it has given me a great deal of pleasure to be here. It was not a very easy matter to get away. We finished work last night at twelve o'clock. I expect to be at it to-morrow night until twelve o'clock. Some of you who think Cabinet Ministers have soft snaps would be grievously deceived if you were down there. When my friends of the Eastern Dairymen's Association asked me to come down that I wanted to come if it were at all possible. I am very glad indeed that I did come here, to express my pleasure at the success with which your Association has met, and to know that your Association is working along the best lines for the betterment of your industry and that in doing that you must necessarily help the other sister industries. I wish to express to you the hope that you will have the most successful year in your work, and that you will heartily co-operate amongst yourselves, and to assure you that whenever we can assist you and meet you in any intelligent way, you can always depend upon it we shall be glad to do it, speaking now for the Government.

SECRETARY'S REPORT.

T. A. Thompson, Almonte.

I have much pleasure as your secretary in presenting my annual report for the year 1911.

The year 1911 has been a most remarkable one in the history of the dairy industry of this country. Dairy products of all kinds have commanded a higher price than has ever been realized in Canada before, but far more significant is the fact that the amount of poor undergrade goods has never been so small, and it is most gratifying to the members of this Association to know that the good seed of Dairy Education which they have so persistently sown for many years has at last taken root and is bearing fruit abundantly.

The decided improvement in the quality of the dairy goods manufactured in Eastern Ontario has been a marked feature of the year 1911, and great credit is due to our Chief Dairy Instructor and his efficient band of assistants, who have been tireless in their efforts to improve conditions both at the factory and at the farm.

A very important step taken by the directors of this Association was sending our Chief Dairy Instructor, Mr. G. G. Publow, during the past summer to the

British Isles to study dairy conditions in the motherland, and to follow our dairy products from the production of the raw material to the table of the consumer.

It is also worthy of note that the reports of the official prosecutors appointed by this Association clearly show that the pernicious practice of tampering with milk at the farm by skimming and watering is annually decreasing, but there is still far too large a percentage of milk producers in Eastern Ontario who do not seem to realize the enormity of the crime or the stigma of the disgrace attached to such illegal actions.

This Association has been largely instrumental in building up the dairy business of Eastern Ontario and placing it in the proud position that it occupies today, and it is a universally acknowledged fact that whenever there has been a failure of field crops from drought or any other cause that the dairy cow has always been ready to step into the breach and save the country from financial ruin.

And while our breasts may swell with honest pride as we look back on the noble work accomplished by this Association in the past, still let us bear in mind that the dairy industry of this country is but in its infancy when compared with its possible achievements.

The district dairy meeting held throughout Eastern Ontario during the months of November and December have been the means of disseminating much valuable information in respect to all branches of dairying. These meetings are growing in popularity and the increased attendance from year to year clearly demonstrates that the average farmer is being aroused and is commencing to realize the need of dairy education. At these meetings the following gentlemen were nominated to comprise the Board of Directors for the year 1912, and I hope to see the selections which were made by the voice of the people confirmed by the unanimous vote of the members of this Association.

I append a list of the members of the Association for the year 1912, each of whom is entitled to receive the journal known as the *Farm and Dairy*, the official organ of this Association, which is published weekly in the interests of dairy farming.

I have discharged the duties of secretary devolving upon me during the past year with what ability and energy I have at my command, and I wish to tender my sincere thanks to the President and Board of Directors for their willingness at all times to assist me, and for the kindness and forbearance which I received at their hands.

FINANCIAL STATEMENT.

The Financial Statement which appears on page 6, was then presented.

MR. ANDERSON: This statement of the auditors has a far-reaching effect, and I am happy to tell you that the balance is on the right side. I do not know whether it was the buoyancy of the revenues or the economy of the executive in handling the affairs that produced the result, but I am pleased to tell you that the executive have done well during the past year. One of the chief revenues has been from the prosecutions. We are trying to destroy that revenue as fast as we can, and I am pleased to say that it is decreasing. Nearly $1,000 were spent in advertising and speakers to attend the association and factory meetings. The men whom we have attending these meetings are up to date men, really the salt of the earth. I would be glad to see an increase made to our instructors. I believe the day has

come when we should no longer try to teach the cheesemakers to make a better article from milk that is not right; but we should go down the concession lines and see that the farmers have the right milk and that they take proper care of it. We must go down into the valley of the shadow of death and bring these fellows out, and we must have meetings in the school houses and pump this knowledge into them.

One item I would like to deal with is the trip to England. We gave Mr. Publow $500 for his trip, and he came back with a beautiful "wad" and handed it to the boss. He was so busy gathering useful information and so intent on his work that he had no time to spend the money, and brought it back to us.

I think our hands should be held up by the Government. Surely if there is a big industry, and if our efforts on the soil are to be helped, and if we are to develop this country, I think the Government should recognize us and they should give us a larger grant. I am satisfied from the speech we heard last night, and from the talk I had with the Hon. Mr. Duff while at the Fat Stock Show at Guelph, that we are going to receive more recognition. I am proud of our financial statement, and of the work that has been done, and I am proud of the work Mr. Publow did while in England. I hope to see our worthy president go over there and measure up with the Englishmen. I have much pleasure in moving the adoption of the financial report.

The motion was seconded by Senator Derbyshire and carried.

ELECTION OF OFFICERS.

MR. SINGLETON: I have a duty to perform in reporting the names that have been nominated by the different districts and I move that they be adopted. The motion was seconded by G. A. Gillespie and carried. The list of officers elected appears on page 6.

THE PRESENT VALUE OF COW TESTING.

CHARLES F. WHITLEY, DAIRY COMMISSION STAFF, OTTAWA.

The Dairy Commissioner asked me to make the announcement that the Dominion Department of Agriculture, through the Dairy Division, intends to pursue cow testing work very much on the same system at at present with one or two little additions this year. It has happened once or twice that the officers of the Dairy Division have had to arrange meetings and talk cow testing before there was any request for an Association to be organized in that particular locality. We are going to turn that around now, and we are going to see that the responsibility of the spreading of cow testing should come on the shoulders of the men who are directly interested in it—that is to say, the men who are running the factories—and we are looking to them to interest their patrons in cow testing and take the responsibility of the work of organizing the Association. Not much has been said about dairy record centres, but I can assure you that a great deal of solid work has been done in Eastern Ontario. We have two centres, one in Peterboro and one in Lanark County, and I am very glad to say that the bureau recorder in charge of

the Peterboro district is here this morning and if time permits, will give a short resume of the work that is being done. It is intended that these men shall do the actual testing themselves. They drive around and visit each man who is interested in cow testing and give him a lift for two or three weeks. We have had remarkable success in that work this season, and we are prepared to extend the dairy work in that direction. Our cow testing work is showing a very gratifying increase and it is very significant that, where we have had men who have taken up cow testing and they have got a little slack and dropped out, they are coming back. One of the most encouraging signs is that where any have stopped testing for a month or two they come right back again. We are now recording between ten and eleven thousand cows per month, and over one half the cows that are being tested are in the Province of Ontario.

It is now fairly generally understood that one fundamental principle of cow testing is that each cow in the herd shall be known to make a profit—surely a most reasonable proposition.

If each does not pay, where lies the fault? Possibly a paraphrase of a poetic line explains: "The fault, dear Brutus, lies in ourselves, not in our cows, that we are profitless." If in ourselves, the remedy is obvious. Surely we are sufficiently alive to our own interest to give cow testing a trial, to profit by its numerous advantages.

Probably we are apt to magnify the effort needed to weigh and sample: the milk from two cows can be weighed in one minute; less than ten minutes a month for each cow will serve to take samples and keep records of weights.

The avenue of success lies through the gate of decision and along the main road of endeavor and persistence. The outlook is so bright for every initiate that our mental vision of the plan should be keen, not hazy, our mental ear unstopped and alert to this call of modern, common sense, progressive dairying.

What is this paying basis for a cow? If we agree that it takes $40 to feed a cow, then with milk at $1 per 100 lbs., the mature animal must give over 4,000 lbs. before she returns a profit of even one cent. Do all your cows give over 4,000 lbs.? On examining the records of 1,600 cows for last year, I found that 35 per cent. gave less than 4,000 lbs.: that is, 7 out of every 20 cows scattered over several counties could not be said to yield any profit above the cost of feed.

Table I.—Contrast Between Two Ontario Herds.

11 Cows (Lanark)—	5 Cows (Oxford)—
Average yield, 3,794 lb. milk.	Average yield, 12,068 lb. milk.
3.4 test, 131 lb. fat.	3.3 test, 400 lb. fat.
Total yield, 41,737 lb. milk.	Total yield, 60,340 lb. milk.
1,445 lb. fat.	2,003 lb. fat.
$5 profit per cow.	$80 profit per cow.

Note that the *5 cows gave nine tons of milk* and a quarter of a ton of fat *more than the 11 cows.*

Every time each of the 11 cows filled one factory milk-can each of the 5 cows filled not one but *three* similar cans.

The 11 cows gave a bare profit over cost of feed, averaging only $5, but the 5 cows gave an average profit of $80: thus *one good cow equals sixteen* of the poorer kind.

These are types of cows on which good human energy is being sacrificed. They make huge and quite unnecessary demands on the charity of the most generous fellow in the world, the average dairyman.

For a moment notice the loss entailed by keeping these poor cows. The economic instinct imbedded in man cries out against waste: it warns us not to let poor cows waste good feed that better cows with more suitable temperament can convert into milk at a handsome profit. Dairy records show that some cows produce milk at a cost of 65c. per 100 lb., while others under the same roof run the cost up to $1.20. What does your milk cost? A little more fuel in the stove than what serves to keep it just alight means more heat production, so a little more feed often means more cow comfort and a heavier milk production. Don't save at the spigot and waste at the bunghole.

Surely dairymen can critically and wisely observe conditions in the business world. A manufacturer knows exactly the cost of his products. But two neighboring milk manufacturers find the cost is 65c. one side of the fence and $1.20 on the other. Can you possibly conceive a similar situation in the manufacturing world? Would any two makers of paint, bricks or flannel rest satisfied with such a state of affairs if they compared notes, as one costing practically double as much as the other? If such variation did occur, would you not be the first to exclaim something must be radically wrong, the raw material, the machinery or the manager must be woefully astray somewhere? Take it even in the next stage of handling your own product, milk; imagine three cents a pound for making at one factory, and six cents on the next concession. There would soon be a rebellion! Cow testing is of grand immediate value because for one thing it enables us to individualize, to detect unerringly the useless animated machine that does not produce milk economically. We don't want the kind that only turns out $35 worth, while in the next stall is one keyed up to the tune of $80 or $100.

In studying economy of production we need to think if it will cost more, or less, to produce 24,000 lbs. milk from 3 cows or 8.

We can therefore grip the present value of cow testing, because one main purpose is the determination and then the improvement of the dairy value of each individual cow. That is definite, economical productive power. This record system ensures more intimate and analytical examination of cows. The unit of measure of value is thus transferred to its rightful place from the herd to the individual. Then with the joyful departure of the unprofitable servant that has worked the confidence trick just a little too long, with the selection of young stock of individual merit from parents tried and tested, there must follow a demand for healthier, better class stock, thus better milk and more of it will be provided. And such milk happily will be produced more cheaply. Our older men are more desirous of such results, our younger men are eager to speed the advent of that day, thus still more cordial relations between farmers are being encouraged. This demand further emphasizes the value of practical co-operation, particularly in the purchase of pure bred sires, and in that matter let us beware of the blind worship of cheapness. We need the best available, for the investment is safe. In this social age we need to act together, to pool our energies. Yet as society is only the one man multiplied, individual action must lie at the base of all great movements. Every citizen is ruler over his own particular self-territory. So when we have whole regiments of reform marching towards the goal of public good let each dairyman join the ranks—co-operate.

But with these poor cows is there is not also serious loss of product? Does each one of your cows give you a generous 6,000 lbs. of milk? Are yours good cows or only good for nothing? It has been my privilege to address this convention on this topic of cow testing for seven consecutive years. May I point out that

had the initial remarks been heeded, if indeed only three years ago, any dairy farmer might now be keeping cows giving at least 300 lb. of butter or 6,000 or 7,000 lbs. of milk. That has been accomplished in many instances where men have awakened to a knowledge of what rich freight this argosy of cow testing brings for their unloading. Some men only hope vaguely for such results, making but puny efforts towards their achievement. The grass grows long in the cemetery of feeble aspirations: we have to be up and doing to make cow testing of present value.

There is another serious waste that has been almost entirely ignored: I refer to the fearful waste of human energy in handling these poor cows. Taking the one operation of milking, sixty hours per cow for ten months, then so as not to make out too staggering a case, cutting down that 35 per cent. of poor cows just mentioned to only 20 per cent., it means that there is a waste every year of the stupendous total of 30 million hours just in milking these profitless cows. This is hard to grasp, so let us digest it this way; it means that enough energy, enough man power, is being put into just that one operation of milking poor cows in Canada to equal the work done by horses plowing 375,000 acres of land. It is appalling that there should be this burdensome tax on human endurance, and the strangest part of all is that many view this matter so indifferently and complacently. Our energy, above all things, needs conservation and turning to profitable account. There is a limit to our natural resources, therefore we wisely seek to conserve them, but of infinitely more value is human energy (which we unthinkingly squander), because knitted with human ingenuity it has to guide and direct the wider conservation. Cow testing has been the first to point out this huge expenditure of muscular and nervous force. Such sheer waste must be stopped, human energy must be conserved. We want no spendthrift nation.

As the proof of the pudding is in the eating, so fortunately the value of cow testing is quickly tasted in every district where dairymen have been bright enough to adopt it. Results are not insignificant, they are striking; not measured in ounces but tons: not counted by fractions of cents but by hundreds of dollars; and, just as quickly, cow testing is appraised not as a general privilege, but as a valuable personal opportunity and possession. Cow testing results are not fiction, though they sometimes approach the semblance of miracles; they are sober, hardpan facts. No multiplication of words is necessary to prove this, a few figures will convince any skeptic. The tree is known by its fruits. In testing we have no gambling or speculative proposition, we have certainty; no long odds against us, but the ball set rolling lands between the goal posts every time.

In testing we have the substitution of definite knowledge for mere guess work as to a cow's dairy capacity; guessing is not farming. We have the elimination of shiftlessness, disappointment and mortgaged farms. We have the development of thrift and general prosperity, a happier and better home for the wife, more interested and contented boys and girls on the farm.

Some increases that assist in this glorious reality are tabulated in the following chart.

TABLE 2.—TRIAL BALANCE. IN ACCOUNT WITH THE AVERAGE FARMER.

Debits.	Credits.								
	Increases in Milk Yields.								Present Yield per Cow.
	Province.	Percentage. 50	100	150	200	250	300		Lb. Milk.
No Losses at all.	Ontario							128%	8,000
	Quebec							91%	7,270
	Nova Scotia							278%	5,520
	New Brunswick							70%	7,835
	Prince Edward Island							300%	5,800
	British Columbia							100%	6,180

"GO THOU AND DO LIKEWISE."

There is everything to gain in taking up cow testing. While these men have been increasing their yields so splendidly what have you been doing? Irrespective of provincial boundaries or breed distinctions these six substantial increases are tabled as samples of the revolution that cow testing accomplishes. These men have succeeded beyond any dream of four years ago and now have herds in which each cow is worth keeping. An increase of from 70 per cent. up to 300 per cent. is here shown in each of the six herds. Cow testing pays.

Cow testing is of increasing value each year. The dairymen building the best herds on the solid foundation of individual records could never be content with seven or thirty day tests. Seventy pounds of milk per day may cause wonder, the week's total may be much heralded abroad but the factory patron wants the business cow, the profitable "old reliable" that month after month rolls up a good record: while more valuable still is the cow that has the greater number of yearly records to scan. You may possibly to-day point proudly to Spot or Buttercup in your stable with a total of 1,400 lbs. of fat in the last five years, or have you some museum specimens that gave scarcely 800 lbs. in that time? They are simply poachers on the preserves of better cows' attainments. Would you not far rather keep six cows than sixteen to make one ton of butter? In many herds we find one good cow making more profit than accrues from the combined efforts of five or six poor ones which are as idle as a painted ship upon a painted sea. Why potter with them?

Our results establish cow testing as one of the best time-saving and labor-saving propositions ever placed before Canadian dairymen. For the investment of one little dollar in scales men are now receiving $20 through the increased production, besides the intense satisfaction of knowing that they are milking none but profitable cows. Probably no work on the farm pays greater profits. It is no uncommon thing to find the press telling of dairymen making twice as much from their cows since they began to weigh and sample. There are cows on our records in British Columbia, Quebec and Prince Edward Island that are making.

140 pounds of butter in two months, earning one dollar and sixty cents every second day of cold January and February. Some with better breeding are giving 2,500 lbs. milk and 80 lbs. fat per month. These shining lights in the dairy world have been discovered through cow testing, and there are plenty more. The simple fact is that there is a sum of *over* $20,000,000 *per year* lying dormant in undeveloped cow quality. A good slice of that is yours if you acknowledge the present value of cow testing, and thereby get each one in your herd geared up to the notch of large profitable production.

Benefits to the Factory.

Every cheese and butter maker, as well as every factory proprietor, should be interested in extending cow testing because with its adoption the factory stands to make important gains in several ways. A proportionate reduction in the cost of hauling milk results as more milk is obtained per cow and therefore from the present territory. There will be less waste from teams hauling only half a load. With the same plant a larger output can be handled thus effecting a proportionate lowering in the cost of making.

As the cows are cared for better, the factory season will be lengthened; this means running on a more economical basis, for no manufacturer rejoices to see his machinery in operation only half or three-quarters of the year.

Patrons who take up cow testing pay better attention to their stock, ensuring milk being cared for better and delivered in better condition. This points to easier handling of the milk in the factory under more pleasant conditions, resulting in a shorter day's work and a better quality of product.

As the district becomes the home of better dairymen the factory and its goods receive gratuitous advertising and a desirable reputation.

An increased cash income also results, because more and better milk will help to raise wages: besides this, the Department pays for each test made for members of cow testing associations.

There will be a growth in estimation of the worth of the maker to the district as his factory becomes a clearing house of progressive dairy information and practice.

The Chairman: I think you all agree with me that this is the finest address we have had. It touches the vital strings of our business, and if any of you would like to ask any questions, Mr. Whitley will be pleased to answer them.

Mr. Hyatt: Mr. Whitley did not touch on the value of the herd. I was at a sale the other day, and the record of each cow was read, and the result was that they brought nearly three times as much as cows would bring that had not been tested.

Mr. Whitley: I can give numerous instances of that kind. One of our men told me the other day he had a cow that he thought was a good one, and that he was going to save the next bull calf from that cow. He tested that cow and not once this year did her milk test 3.1, and after that test he is not going to keep her calf. Just think for a moment what that man has saved by making that test. He does not want a bull at the head of his herd from a mother that only tested 3.1. He wants one that will test 3.8. He is selling cream, and he wants rich cream.

Senator Derbyshire: I would like to draw attention to the fact that Mr. Publow, in his report yesterday, said that the average of Eastern Ontario was 3,406 pounds of milk. Now you will see from Mr. Whitley's chart that means that where they only got 3,794 pounds of milk from their cows five years ago they are

getting 4 per cent. butter fat, and 12,068 pounds per cow now. That means that they are prospering. When you are driving along the road you do not have to get out of your buggy to tell whether the farmer is prospering. You can tell the men that have cows that are producing 10,000 pounds of milk by the look of the farm. That man is prospering. I wish these men who keep the 3,000 pound cows would go west and grow wheat. They are no good here in Ontario. If we can add twenty million dollars to the revenue, every farmer would have one hundred dollars more, and I do not think it would worry him as to how to spend it.

MR. ANDRUS: I have had charge of the cow testing work in the Peterboro district since last march, but this was not the beginning of the work, Mr. Somerville having already organized that district, and cow testing was carried on, starting in 1907. We have herds in that district now that average all the way from ten to twenty cows, and in these herds we can point out an improvement of 2,000 pounds per cow. The idea of having a man on the district was not so much to do a lot of work, but to do work right around Peterboro, and to get a large number of farmers interested, so that a man could, without too much driving, visit a number of farmers and encourage them in this work. He would look after the little details and see that the samples were properly taken, and that the bottles were always in the right shape, and that the boxes got back from the factories, and that everything was in good working order. I did a good deal of the testing myself. I would like to tell you a few of the things that I found out this year. Down at Norwood there is a herd of six cows owned by Len Brown. He had a cow that he didn't like the looks of, but he started in testing last spring, and this is what he found. That this cow, although one of the smallest milkers in the herd, tested above the average, and in ten months produced 9,435 pounds of milk, and 432 pounds fat. That is the cow that he considered the poorest one in the herd but she was really the most profitable cow he had. That 432 pounds of fat, figured on a 20 per cent. overrun, and the butter valued at 25c. per pound, shows that that cow brought him in about $120. A year or two ago he offered to sell that cow for $20, but nobody would buy her as they didn't like her appearance. She is very homely looking, but you see she is producing the goods.

In another place we found a high grade Jersey cow which never produced over 330 pounds of milk in a month testing 3.8. We found that a large number of people are keeping cows which produce only a small amount of milk, but they argue that it is rich in fat, yet you see this cow's milk only tested 3.8, and when the farmer found out what she was doing she was shipped to Montreal about a month ago.

In another herd north of Peterboro, consisting of six cows, two of them in the month of June produced somewhere about 1,200 pounds of milk and the other four only produced somewhere around 500 or 600 pounds, making the average about 750 pounds per cow. There is a case where two cows pull up the average of the herd and make it look half decent, or if you like, four cows pulling down the good work the two were doing. That man now says he is disgusted with those four cows. On the wall you will find a bill announcing the sale of fifty high grade Holsteins, and you will notice that they mention that some of them are being tested according to the cow testing work and that they have made good records. That shows you that the people are beginning to appreciate and estimate these records, and the people are buying cows that have been tested and that have a record behind them. Speaking of that pure-bred Jersey, in the past four months she only produced forty-nine pounds of fat.

Q.—How much butter would that represent?

A.—That would be about fifty-eight pounds, and that is the total yield in four months, and we have cows in that district that in the month of June produced fifty-four pounds of fat in one month. During the summer we compared the highest producing cow with the lowest, and there was a difference of from $11 to $12 in one month. That is to say, you would be able to keep a hired girl and pay her twelve dollars a month just with the difference between a poor cow and a good one.

Q.—What style of man was it that kept that Jersey cow?

A.—He was not a bad kind, because he was ready to get rid of her as soon as he found out what she was doing.

Q.—How would you advise us how to start a cow testing Association in this district. There is nothing being done here only what is being done by individuals.

A.—You can grade up your cattle. You can weigh your milk three days a month if you like. I believe it is easier to weigh daily. The maker of the cheese factory does it, and he is paid to do it.

Q.—How many farmers do you require in order to start an Association?

A.—We have never made any rule as to the number of members. That is left in the hands of the local committee. Most of our Associations start with a membership of between fifteen and twenty. What you want to do is to get at it. The scales will only cost you one dollar and the department will supply blanks and the preservative tablets and will pay the maker in the factory for doing the testing. The maker will send the records to Ottawa and we make the calculations and send them back to you at the end of each month. The test costs the farmers nothing.

CREAM TESTING.

L. A. Zufelt, Eastern Dairy School, Kingston.

The object of testing the cream for fat at the creameries is to establish a basis for the equitable division of the proceeds of the sale of the butter among the various patrons who supply the cream. As fat is the only portion of the cream or milk which enters into the composition of butter (excepting, of course, the very small amount of casein which may also be present), undoubtedly, then, the amount of fat which these contain determines their value for butter production. Cream is simply the fat globules of the milk gathered together into a smaller bulk. Butter is a still greater compression of these fat globules or the entire expulsion of the remaining portions of the milk, leaving a substance which we call butter, the composition of which is, roughly speaking, 85 per cent. fat, 12 per cent. moisture, and 3 per cent. salt and curd. It is quite evident from the fore-going that the amount of fat which the cream contains (all other conditions being equal) determines its value for butter-making. This being so, it is of the utmost importance to determine accurately what this portion of fat is. In the early history of butter-making various devices were employed for this purpose with more or less accurate results, but since the introduction of the Babcock tester we can with a still greater degree of speed and accuracy determine the amount of percentage of fat which the cream contains, if certain conditions are complied with. No one, I take it, will dispute the accuracy of the Babcock in determining the percentage of fat in cream if the work is properly performed.

The reliability of the Babcock depends largely upon the operator. The test itself is comparatively simple and accurate, and where errors occur they are due not to the machine, but to the *man*. In manipulating this test certain conditions must be complied with, the most important of which are that a representative sample of the cream first be secured and then the correct amount placed in the test bottle. The scale on the neck of the bottle is so graduated as to give the percentage of fat when 18 grams (or 9 grams) of cream is used. If more or less than this amount is used, and if this amount does not fairly represent the cream from which it has been taken, then undoubtedly the result will not be accurate. The pipette used is supposed to deliver 18 grams into the bottle, but as the weight of cream varies according as it contains a greater or less amount of fat and owing to the viscosity and other physical conditions of the cream, it is readily seen that it would be utterly impossible to correctly measure the exact amount, and the only way to ensure getting 18 grams into the bottle is to employ a set of scales and weigh it. The scales made for this purpose are reasonably accurate and will give results correct to within ½ and 1 per cent of the total amount, which is recognized as within the limit of error. Taking a volume of water at a temperature of 60 which weighs 1,000, as a standard, the same volume of fat will weigh 930, whole milk 1,032, and skim milk 1,036. The weight of cream will range anywhere between these, depending on the amount of fat which it contains. The greater the percentage of fat the lighter it would be, as fat is the lightest portion of the milk. The difficulty of measuring 18 grams from creams of varying richness is quite apparent, and the resulting error will be correspondingly great, for if the pipette will deliver the correct amount say for a 25 per cent. cream, then wth a poorer cream the same volume would weigh more than 18 grams, as we would be measuring a heavier substance, and if the cream were richer than 25 per cent. less weight would be delivered on account of its being lighter. There can be no doubt but that the only correct method to employ is to weigh the samples if we wish for correct results.

To illustrate this more thoroughly tests were made at the school of creams of varying richness, with the following results:

Scales.	Pipette.	Scales.	Pipette.
Per cent.	Per cent.	Per cent.	Per cent.
14.2	15.0	33.5	32.0
21.0	21.0	34.0	33.0
25.0	25.0	36.0	34.5
27.0	26.5	40.0	38.0
28.0	27.5	42.0	42.5
29.0	29.0		

It is needless to comment on the above figures, as they speak for themselves and show conclusively that in testing cream the samples should be weighed not measured.

Another difficulty which may be met with is in getting a representative sample in quality for testing. From investigations conducted by Mr. J. F. Singleton, it was found that the samples gathered by the cream hauler fairly represented the quality of the individual creams, and we have no reason to doubt the correctness of these samples when reasonable care is observed by mixing the cream

before the sample is taken. If, however, composite samples are preserved some effort should be made to have the sample which is placed in the jar represent proportionally the amount of cream delivered. For instance, if the weight and quality of the cream varies with each delivery and the same quantity is placed in the composite jar the result may not be absolutely accurate. For example, if a patron delivers say 40 lbs. of cream which tests 30 per cent. fat one day and 60 lbs. testing 20 per cent. on another, he would deliver altogether:

40 x 30	= 12	lbs. fat.
60 x 20	= 12.0	" "
100	24.0	" "

Or, in the two days, he would have delivered 100 lbs., having a total of 24 lbs. of fat, or testing 24 per cent. If the same quantity of each had been put in the sample jar and tested, it would have shown the average of 30 per cent. and 20 per cent. or 25 per cent. In other words, he would have received credit for 1 per cent. more fat than he was entitled to. Whilst the above may be an extreme variation and not usually met with, it nevertheless illustrates the point that some effort should be made to have the sample taken fairly represent both the quality and quantity.

The most serious error may occur in the preservation and care of the samples, especially whether the bottles have been well corked or not. Several tests have been made to find out what error might occur by having the samples left improperly corked or left entirely open.

Samples left open for seventeen days gave the following:

Number.	At the beginning of test.	Seventeen days later.
	Per cent.	Per cent.
1.....	40.0	48.0
2.....	25.0	28.0
3.....	40.0	42.0
4.....	30.0	31.0
5.....	21.0	24.0
6.....	30.0	32.5
7.....	29.5	34.0

The above illustrates the importance of having the sample jars tightly corked, otherwise owing to evaporation the test will be much higher than it should.

In summarizing the foregoing, I would strongly urge that the following points be observed in order to have accurate results:

1. The sample taken should, as nearly as possible, represent both the quality and quantity.

2. The jars should be kept tightly corked, and

3. The samples should be weighed, not measured, when making the test.

If the foregoing three cardinal points be observed in conducting a test, very little room is left for error if the operator be but reasonably careful in the other operations, and the end for which the test is made will be achieved, viz., an accurate basis on which to apportion the proceeds from the creamery.

RESOLUTIONS.

MR. WILSON: On behalf of the Committee on Resolutions, I beg leave to report as follows: "Moved by J. A. KERR, seconded by L. J. WEATHERSTON, That as there is abundant evidence that cow testing is of decided advantage in assisting dairymen to increase the yield of milk and butter fat per cow; therefore this Association requests the Dominion Department of Agriculture to continue its effective demonstration work, and this Association, further, cordially recommends the adoption of the plan by the dairy farmers of Eastern Ontario." Carried.

Moved by JOHN MCGREGOR seconded by J. J. PAYNE, "That this Convention of the Dairymen of Eastern Ontario do strongly urge the Department of Agriculture of the Province of Ontario to increase the salaries of the Dairy Instructors to at least $1,200 per year." Carried.

We also have pleasure in presenting the following resolutions: "That we the members of this Association desire to express our appreciation to the Mayor and citizens of Campbellford for their kindness and hospitality extended to the officers and members of this Association."

"That we are grateful and desire to express our thanks to Mr. G. G. Publow (Chief Instructor) for his very interesting and instructive report of his trip to Great Britain, which we are confident will bear good results."

"That the thanks of the members of this Association be tendered to the Canadian Salt Co., of Windsor, Ontario, through their General Manager, for the very handsome badges presented by the Company to the Association."

"That the thanks of this Association be and are hereby tendered to the Dominion Government for their assistance in many ways, especially in Cow Testing Association work and in Cold Storage Transportation, and we would strongly recommend that it be continued."

"That we extend our thanks to the Provincial Government for their several grants and the many other ways of helping the Association."

"That the thanks of the members of this Association be tendered to the gentlemen who so ably addressed us and to those who furnished the excellent music."

"That this Association extend thanks to the different Railways for giving delegates reduced rates from all points to Campbellford."

The foregoing resolutions were then adopted.

THE CHAIRMAN: When I was in England last year I was proud to tell the people that I came from Eastern Ontario where we produced such a fine quality of cheese and butter. Our weak point is the small quantity of milk that we produce. Now I want to ask you whether you intend to be an ordinary person and only make five dollars per cow, or whether you intend, during this next year, to take first place and make eighty dollars and more out of each cow in your herd.

The Convention then adjourned.

Dairymen's Association of Western Ontario.

ANNUAL MEETING.

The Forty-fifth Annual Meeting of the Dairymen's Association of Western Ontario was held in the Town Hall, Ingersoll, on January 10th and 11th, 1912, and was well attended.

PRESIDENT'S ADDRESS.

WM. WADDELL KERWOOD.

As President it affords me much pleasure to welcome you to-day to the Forty-fifth Annual Convention of the Dairymen's Association of Western Ontario. I am pleased to welcome you to our meeting in Ingersoll, and in the County of Oxford, on account of the historic association of this town and vicinity with the dairy industry. It was in this section that the Ontario cheese factory system originated, and here, also, the first and one of the largest cheese was made and exported, and did much to advertise Canada and bring our daily possibilities to the notice of the outside world, and more especially to merchants on the English markets.

Our Association was born in Ingersoll, and many of its founders were citizens of this historic town. I well remember myself the noble service rendered our Association by such men as James Noxon, C. E. Chadwick, E. Caswell, and not the least by one of the present citizens of the town, I mean, J. C. Hegler.

I attended my first convention in Ingersoll about forty years ago, and it might not be out of place to review some of the changes that have taken place in the dairy business during that time. At that time about the only source we had of receiving instruction in dairy methods, outside of the practical training in the factories, was what we received at the Annual Convention. That was a time when we appreciated these meetings, and we can scarcely realize how much we are indebted for the solid foundation on which our dairy business was then established to such men as Professor Arnold, Z. A. Willard, Lewis Harris, and others from the neighboring republic who were always present at our meetings and gave us so freely of their practical knowledge. Then we had our local men, such as Harvey Farrington, H. P. Lossee, Thos. Ballantyne, B. Hopkins, and many others who were untiring in their efforts to lay the foundation well.

Looking into the future they saw the necessity of producing a uniform quality of goods, and it was then they laid the foundation of the splendid system of dairy instruction that we have in the Province of Ontario and in Canada to-day. Professor Arnold was the first instructor engaged to visit the factories, and at that time the only one. From that small beginning and from the splendid assistance given by our Government, both Federal and Provincial, schools have been established and a system inaugurated which has reached every maker in our Province and many of the producers, as well; and we should not rest until every producer has been informed as to the best method of handling dairy products.

The past season was a somewhat peculiar one. In the early part of the season we had a slump in prices, especially in butter, which made us wonder if we had reached the limit of production; but the market quickly recovered, and such times as these only go to show how sure a foundation the dairy industry rests on, as before the end of the season we reached the highest prices on record. These high prices were, no doubt, partially brought about by unfavorable conditions for production in both England and New Zealand as well as in some sections of our own Province. But the real reason was that consumers will have dairy products of good quality.

Our total exports for the year will equal, if they do not exceed, those of 1910. While there has been a decrease of about 68,000 boxes of cheese, there has been an increase of 107,000 boxes of butter. The exports of cream to the United States have been only about half of what they were in 1910, owing largely to lower prices in the markets on the other side and higher prices in Britain. Canada's home sumption of dairy produce, it is needless to say, continues to increase. The increase cannot be less than $2,000,000 in value every year, including milk and all its products. The total home trade cannot be far from $80,000,000 a year, which means that our home market is by far the most important one for the dairy farmers.

One of the outstanding features of the dairy business at the present time is the scarcity of milk and more especially for the larger towns and cities. In many cases the cities are reaching out so far for a supply that it is having a serious effect on some of our cheese factories and creameries. On the whole, the dairy situation is in a most healthy condition, and there need be no fear of increasing the production as all dairy products are likely to find ready sale at remunerative prices.

DIRECTORS' REPORT, 1911.

Your Directors are pleased to report that although the weather during a portion of the past season was unusually dry and warm, yet other conditions, especially prices, were favorable to the dairymen.

The dairy industry continues to be recognized as taking first place in the many important branches of Ontario Agriculture. We trust the work of your Association has been appreciated, and we assure you that everything possible has been done to further the interests of this great dairy industry.

Prices for Dairy Products.—*Cheese.* The prices for cheese have probably been higher during the past season than at any time in the history of the trade. Unfavorable climatic conditions in England and elsewhere brought about a shortage of dairy products, consequently the demand for Canadian cheese and butter has been unusually active at prices that have made the season profitable to producers irrespective of dry pastures and a lessened milk supply.

Butter. The Old Country market took a considerable portion of our surplus, and with the growing demand in the Western Provinces, in addition to local consumption, prices during the latter part of the season were exceptionally high. For the early part of the season prices were not so encouraging owing to the prospect of a heavy output of butter without many signs of a profitable outlet. Although the production of butter has been largely increased the market has been able to absorb the amount at good average prices for the season.

It is to be regretted that the cheesemakers did not in all cases share in the general prosperity from the advance in cheese prices, for unfortunately the output of a large number of factories was, on account of the dry season, less than the previous year, which makes a corresponding decrease in the maker's remuneration, as he is usually paid a stated price per pound for manufacturing. However, it is to be hoped that the high prices, together with better climatic conditions next season, will stimulate the patrons to a much larger production, and thus the cheese and butter makers be reimbursed for the short make of 1911.

Membership.—Your Association has a membership of 315. We trust this will be increased in 1912. Subscription to *Farm and Dairy* for one year is included in the membership fee of $1.00.

Competition.—It is just possible that undue competition between factories is not having a good influence on the industry as a whole. Might it not be possible for the manufacturers in certain districts to meet and decide on respective territory, thus dispensing with the expense of having wagons from different factories hauling milk and cream over the same routes.

In some localities cheese factory and creamery managers notice a tendency during the factory season of a few producers to ship milk and cream away, thus weakening the local factories. Should the output of some of these factories be reduced to any extent the result will be an increased cost of manufacturing, while those who do not patronize the home factories may not at certain seasons of the year get a profitable increase in price, especially if the local factory is obliged to close early in the season owing to a curtailed milk supply.

Could not some satisfactory arrangements be made to change these conditions?

Cream and Cream Shipping.—Less cream has been shipped over the "Border Line" this season. A considerable portion of the cream that was formerly manufactured into dairy butter on the farm is now being sent to the creameries or shipped to the cities, thus relieving the markets of a large portion of dairy butter.

Special Officer.—A special officer was again employed to deal with cases of deterioration of milk. Your Directors respectively recommend the incoming Board of Directors to continue this system. The Association is in debt to this work $59.70.

Dairy Herd Competition.—Your Directors decided to continue the Dairy Herd Competition. The changes made last year in the method of awarding the prizes seemed to meet with general approval, therefore similar arrangements were followed this year. One hundred dollars was donated to this work. Although the number of entries has not increased, yet the wide publicity given this competition through the agricultural press we believe has been the means of inducing many patrons to make special efforts to increase the output from the individual cow and to improve the whole herd. One encouraging feature of this competition is that the standard for winning the prizes has been raised each year since the competition began. A full report will be submitted during the meeting of the Convention.

Dairy Exhibition.—The Dairy Exhibition has been continued, the Association donating $400 in prizes. We wish to thank all those who contributed special prizes. The entries this year have decreased somewhat. Perhaps some makers may feel a little discouraged in not having been fortunate in winning prizes in the past, and have neglected exhibiting their cheese and butter. This, we believe, to be a mistake, as we know of no better means of advertising the fine quality of Western Ontario cheese and butter than through the medium of the Winter Dairy Exhibition. It should receive the support of all cheese and butter makers. We feel sure

that this Exhibition has been a great help in improving the quality and finish of our cheese, and should the incoming Board of Directors decide to continue this Exhibition next year we hope that the usual number of makers will take advantage of the opportunity offered to exhibit and advertise their dairy products.

Factory Improvements.—The cheese factory and creamery buildings are being improved as rapidly as funds will permit, and in many instances better equipment is being installed. Several new buildings have been erected during the past season.

Instruction Work.—The work of dairy instruction carried on through the Ontario Department of Agriculture in conjunction with your Association is resulting in a gradual improvement in the raw material as well as the finished dairy product. A full report will be submitted by the Chief Instructor.

Makers' Certificates.—During the past season all competent factory operators were granted "Makers' Certificates" by the Ontario Department of Agriculture. This seems to be working out well so far, and we trust will have a good effect on the business.

Speakers for Annual Meetings.—Speakers were sent to annual meetings last year, the Dairy Branch of the Department of Agriculture very kindly paying the expenses of this work. This has been the means of bringing before milk producers much valuable information which we believe is appreciated. The work will be continued.

Legislation.—It is expected that at this session of the Dominion Parliament the "Inspection Sales Act" will be amended to include the branding of "Whey Butter." The inspection of scales used for weighing cream samples for testing will also likely be dealt with.

Board Meetings.—Several Board meetings were held, and your Directors endeavored to transact the business of your Association to the best of their ability. We wish to express our appreciation of the assistance given by the Ontario Department of Agriculture to further the dairy interests of this Province through grants of money, legislation, and education. The aim of dairy instruction is to place the industry on a solid basis, and endeavor to keep the quality of Ontario cheese and butter second to none. Quality is of as much, if not more, importance than quantity in the scheme of advancement.

Upon motion, the report was received and adopted.

FINANCIAL STATEMENT.

The financial statement was then presented by the Secretary Treasurer, and upon motion was received and adopted. (See page 6.)

REPORT OF DAIRY HERD COMPETITION, 1911.

The Association again donated $100 in cash prizes for the Dairy Herd Competition, and Ryrie Bros. kindly donated silver and bronze medals. The prize list was arranged for two sections in each class, the same as last year. It is interesting to note that the winners in both the Cheese Factory and Creamery Class have again raised the standard for the amount of milk and butter fat per cow over previous years.

Class 1.—For Patrons of Cheese Factories.

Sec. 1.—To the patrons who furnish the 1st, 2nd, 3rd, and 4th largest amounts of milk per cow to any cheese factory in Western Ontario from May 1st to Oct. 31st, 1911. From herds of 8 to 14 cows (inclusive). 1st, $10.00; 2nd, $7.00; 3rd, $5.00; 4th, $3.00.

Sec. 2.—To the patrons who furnish the 1st, 2nd, 3rd, and 4th largest amounts of milk per cow to any cheese factory in Western Ontario from May 1st to Oct. 31st, 1911 From herds of 15 cows or over. 1st, $10.00; 2nd, $7.00; 3rd, $5.00; 4th, $3.00.

Class 2.—For Patrons of Creameries.

Sec. 1.—To the patrons who furnish the 1st, 2nd, 3rd, and 4th largest amounts of butter-fat per cow to any creamery in Western Ontario from May 1st to Oct. 31st, 1911. From herds of 8 to 14 cows (inclusive). 1st, $10.00; 2nd, $7.00; 3rd, $5.00; 4th, $3.00.

Sec. 2.—To the patrons who furnish the 1st, 2nd, 3rd, and 4th largest amounts of butter-fat per cow to any creamery in Western Ontario from May 1st to Oct. 31st, 1911. From herds of 15 cows or over. 1st, $10.00; 2nd, $7.00; 3rd, $5.00; 4th, $3.00.

Special Sweepstakes Medals.

A Silver Medal (value $10.00) to the patron who furnishes the largest amount of milk per cow in Class 1, Sec. 1 or 2.

A Brouze Medal (value $10.00) to the patron who furnishes the largest amount of butter-fat per cow in Class 2, Sec. 1 or 2.

Rules of Dairy Herd Competition.

1st. No herd of fewer than eight cows will be allowed to compete.

2nd. Figures must be taken from the cheese factory or creamery books, and the number of cows and the total and average amounts of milk or butter-fat must be certified to by the cheese or butter maker, and the secretary of the cheese factory or creamery.

3rd. The average amount of milk or butter-fat per cow must be calculated on the basis of the total number of cows from which milk or cream is sent to the factory during the season of six months, May 1st to October 31st, 1911.

4th. No substitution of one cow for another will be allowed.

Note.

Example 1.—If a patron begins to send milk or cream to the factory on 1st of May from, say, eight cows, and continues to send to the 31st of October from the same herd, he is eligible. Larger herds the same.

Example 2.—If the patron begins to send milk or cream to the factory on 1st of May with, say, only seven cows in milk, and in June, or at any other time, another cow freshens, and in July, or at any other time, another cow freshens, making in all nine cows, the patron is not barred from competing, provided the total number of cows (9) is used for dividing the total milk or butter-fat to find the average amount of milk or butter-fat per cow for season. Larger herds the same.

Example 3.—If the patron begins to send milk or cream to the factory on May 1st with, say, eight cows, and in June, or any other time in the season, for some cause, one cow drops out of the herd, the patron is not barred from competing, provided the total number of cows (8) is used for dividing the total milk or butter-fat to find average amount of milk or butter-fat per cow for season. Larger herds the same.

Example 4.—If the patron begins to send milk or cream to the factory on May 1st with, say, eight cows in the herd, and sometime during the season, for some cause, one or more cows drop out of the herd, the patron will not be allowed to substitute a new milch or any other cow in order to keep up the milk from the herd. Larger herds the same.

The Winners.

Cheese Factory Patrons.

Section 1.—1st. Peter Arbogast & Sons, Sebringville, Black Creek Cheese Factory, 196 acres in farm, 10 Holstein and Durham grade, 79,726 total lbs. of milk, 7,972 lbs. of milk per cow, 407 lbs. of milk produced per acre.

2nd. Seymour Cuthbert, Sweaburg Factory, 75 acres in farm, 14 Holstein grades, 106,727 total lbs. of milk, 7,622 lbs. of milk per cow, 1,423 lbs. of milk produced per acre.

3rd. Fred. Bodkin, London, R. R. 9, White Oak Factory, 160 acres in farm, 12 Holstein and Durham grade, 77,337 total lbs. of milk, 6,111 lbs. of milk per cow, 483 lbs. of milk produced per acre.

4th. Wm. M. Bartley, Belmont, Belmont Factory, 50 acres in farm, 8 Holstein, 44,444 total lbs. of milk, 5,555 lbs. of milk per cow, 888 lbs. of milk produced per acre.

Section 2.—1st. W. G. Pearson, Holbrook, New Lawson Factory, 100 acres in farm, 17 Holstein and Holstein grade cows, 123,695 total lbs. of milk, 7,276 lbs. of milk per cow, 1,236 lbs. of milk produced per acre.

CREAMERY PATRONS.

Section 1.—1st. R. M. Bowie, Beachville, Beachville Creamery, 50 acres in farm, 8 Holstein grade cows, 2,101 total lbs. of butter-fat, 262 lbs. of butter-fat per cow, 42 lbs. of butter-fat produced per acre.

2nd. A. W. VanSickle, Onondaga, Brant Creamery, 230 acres in farm, 14 grade Shorthorn cows, 2,315 total lbs. of butter-fat, 165 lbs. of butter-fat per cow, 10 lbs. of butter-fat produced per acre.

SWEEPSTAKES MEDALS.

Peter Arbogast & Sons, Sebringville.
R. M. Bowie, Beachville.

MANAGEMENT OF WINNING HERDS.

PETER ARBOGAST & SONS, SEBRINGVILLE.

MILKING.—The milking was done regularly each day, and when possible each cow was milked by the same milker.

About six years ago we joined the Black Creek Cow Testing Association, and since that time we have increased the production each year, and expect to increase it to an average of twelve thousand pounds per cow, by careful breeding and feeding.

BUILDING UP THE HERD.—Some twenty-five years ago we had a herd of cows then commonly known as the Shorthorn milking strain. These cows were bred to a Holstein bull, the heifers from the best cows were kept, and Holstein sires have been used ever since.

We now have over forty females, all showing excellent dairy qualities. Two bulls are kept, in order to avoid inbreeding. Bull No. 1, Celestia Scott's Mercina; bull No. 2, King Setje Walker. Both animals are fine individuals.

WATER AND FEEDING.—No fixed rule can be given for a herd of cows. The main object is to feed for profit. The feeder must study each cow's likes and dislikes. Some cows are very fond of alfalfa hay, while others prefer clover hay. Water is before the cattle at all times, while they are kept in the stable. We have learned that no cow will do her best unless she has water at her will, as cows always want water after eating, and not any sooner.

The morning ration was fed between five and six o'clock. Each cow got from twenty-five or thirty pounds of ensilage and one pound of meal to every five or six pounds of milk that was given. After this the roots were fed about thirty pounds to each cow. They were then given what clover hay or alfalfa they would eat up clean. At four-thirty p.m. the same ration was fed. The meal consisted of oats, barley, bran and a little wheat. Cows are very fond of a mixed ration, and it also helps to fill the milk cans. On the twentieth of May the cows were turned out on pasture. From then until the first of July no meal or bran was fed. Pasture was then becoming short and dry, and in order to keep up the milk flow, we started to feed ensilage and a little meal, and continued so until winter set in.

Individual Yields.

The following is the yield per cow:

Cow No. 1	10,192 lbs.	Cow No. 6	11,242 lbs.
" 2	10,900 lbs.	" 7	12,102 lbs.
" 3	10,800 lbs.	" 8	12,622 lbs.
" 4	11,279 lbs.	" 9	12,610 lbs.
" 5	11,286 lbs.	" 10	10,920 lbs.
		Total	113,453 lbs.

Average pounds of milk per cow for the milking period, 11,395 lbs.

Mr. Herns: We often hear it said, "a man should keep so many cows per acre on his farm," or "he could produce so many pounds of milk per acre." For instance, here is a man who has only fifty acres in his farm, and yet he is producing forty-two pounds of fat per acre and with only eight cows. He is producing 2,101 total pounds fat. In this other case we have fourteen cows with a total of 2,315 pounds of fat, and two hundred and thirty acres in the farm making only ten pounds per acre. If we could get a better fat production per acre then it seems to me we would be getting along the line of increased production, and I simply put that on the chart to show the production per acre. Here is one with a seventy-five acre farm and he is keeping fourteen cows.

Q.—Probably he is buying half his feed?

A.—Of course we do not know that, but he would not buy it very long unless he was making money.

Q.—It does not show the value of the farm?

A.—No, it is not meant for that, but it does show the amount of milk and fat per acre produced on these different farms.

The Chairman.—It looks to me as though the farmers could produce more milk per acre than they are doing. There is nothing that will pay us as well as milk and butter fat produced on the farm.

THE OUTLOOK FOR BUTTER AND CHEESE-MAKING INDUSTRIES.

An address upon the above subject was delivered by Mr. J. A. Ruddick, Dominion Dairy Commissioner, which will be found in the report of the Eastern Association, page 30. He prefaced it by saying:

I could not help thinking as I sat here this afternoon of the many changes that have taken place and the marked progress that has been made in the dairy industry since that day about forty-six years ago when a few enthusiasts in the dairy industry met out at the cheese factory four miles west of here, which is now owned by Mr. Thomas Caddy, and at that time was owned by Mr. Jarvis. It was built that year. These men met there and talked over the advisability of forming a Dairymen's Association. The occasion was a picnic of the volunteers that was held on the farm of Mr. Jarvis a little this side of the factory. I can remember being taken there as a very small boy and seeing the great table spread and the red-coats and other people around. I remember that picnic because it was talked of in the district for a long time. That meeting held in the Maple Leaf factory resulted in the calling of a convention in this hall on the 31st July and August 1st, 1867, and if the reports of that meeting are to be relied on there were more people present than there are this afternoon. Probably the weather was better just at that time.

That was the first Dairymen's Convention held in Canada. Much progress and advancement has been made since that time. One of the changes one cannot help thinking of is that the men who were instrumental in getting this started have nearly all passed away. Mr. Chadwick, a citizen of this town took a great interest in dairying, and if you read the papers of those years you will find that almost every week there was an item from Mr. Chadwick. After that a factory was started by Mr. Farrington and others. About that time Mr. Chadwick was very active in promoting the organization of the factories, and I think the dairymen owe a great deal to his efforts in that direction. Then our old friends, Mr. Ballantyne and Mr. James Noxon were on hand, and I do not know of anyone among the older members who is now present, except your townsman, Mr. Hegler, who was the first treasurer of the Association.

HOUSING AND FEEDING THE BACON HOG IN CANADA.

J. H. Grisdale, Director Experimental Farm, Ottawa.

I am identified with the Experimental Farm at Ottawa, where we are carrying on a very considerable work—probably more experimental work and investigation work than they are doing at Guelph—although we do not have any students at our Institution. Besides the farm at Ottawa we have a large number of experimental branch farms, twenty-two altogether, throughout Canada. I am not here to discuss the Dominion Experimental Farm system. I merely want you to understand that we are not part of the O. A. C., and that we have land whereon we carry on experimental work.

I am to speak on the "Housing and Feeding of the Bacon Hog in Canada." Although I am living in Ottawa, still I am familiar with the conditions in this part of the country, and when I am speaking of the conditions down there I know whether it will apply as well here or not. We have a large number of pigs, and we feed them in different ways all the time. I mention these facts so that you will understand that what I have to say is not something that I have gathered out of a book, or that we have heard other fellows talk about. The information that I have to give you is what we have learned ourselves. We feed annually from 500 to 600 pigs. We have in our pens and around at the present time between 200 and 300. Our operations are carried on quite independent of the farm—that is, we keep a separate account. We have a small farm of twelve acres where we carry on our pig-keeping operations, and a strict account is kept of every cent that goes in and every dollar of returns from the pigs. In 1910 our pigs cost us to feed and care for just about $5,000. We bought every pound of feed on the market, and sold for $7,550, making a net gain over and above the cost of feeding and caring for the pigs, $2,550. That, I think, will show you that seeing it is an experimental farm, and we are compelled to run things differently from the ordinary farmer, and spend a good deal more for labor, yet we have found some way at least of making good returns from our pigs. I want to say that while sales are to a certain extent for breeding stock, yet our prices are reasonable—$15 a pair when they are eight to ten weeks old. More than half the returns were for pork sold on the open market in competition with any farmer who might come along. So you see we had no better conditions than any farmer in Eastern or Western Ontario.

Q.—How many pigs did you sell on the market?

A.—These are the returns for breeding and feeding purposes. The returns are a little better than half for pork, and the rest are for breeding pigs sold at the price I mentioned. Of course when the pigs get older we sell for higher prices. We have no fancy prices. We try to help the farmer by giving him first-class pigs at reasonable prices. Every pig that goes out is guaranteed.

I will take up the question of housing first. It is certainly one of the most important questions in Canada. You have not quite as much winter as we have, but even here you will have your own troubles in feeding pigs in winter. Taking the pig as a whole I think he displays more eccentricities and more peculiarities in the way of difficulties in housing than any other animal we have. A horse or cow will stand dark damp quarters with no air, or practically none, and come out in the spring all right. The pig, however, will not stand for it. He will just simply express his dislike to the conditions and die. The average pig in winter can find more ways of kicking the bucket than any other class of animal on the face of the earth. The ways he has of dying are innumerable and that is especially the case if one starts to raise small pigs in the winter. Twenty years ago we started to raise pigs. We did not know anything more about it than anyone else at that time. I think we know a little more now. We found innumerable difficulties to overcome. We tried every device for ventilating and for keeping the pigs warm, and I can assure you we met with a great many failures. We have arrived at some conclusions which are of immense value to us, and I want to give you the benefit of these conclusions to-day. To begin with, we have found that the best way to winter breeding stock is to let them run outside and give them a small cabin to sleep in. We have about four months of hard cold weather, and we were afraid to try that; and it was only about six years ago that we undertook to let the pigs run outside and give them cabins to sleep in. These cabins consist of single inch boards with battens over the cracks, and they have little ventilators at the top—small holes bored through the boards, which allow the escape of the surplus warm air. When we found we were having difficulties with our litters, I decided to try what effect it would have to let some of them stay out in these cabins, and the first winter we left three outside, and we had very satisfactory results. The next year I put out six, and the results were still satisfactory; and the next year I put out twenty, and every sow gave us a good large litter of healthy pigs. For the last four years we have fifty to sixty or seventy sows running outside, with that as their exclusive shelter. Where the conditions are not quite so propitious as at Ottawa a straw pen will prove satisfactory, and if you have lots of straw it will prove satisfactory here. It is merely a bit of a shack built something like a table, except that you have poles across the top and four poles for supports, and then straw is piled over the top and sides leaving a little run-away for the pigs to get in. The ventilation goes up through the straw, and the pigs live there through the winter. At our experimental farm at Brandon and Indian Head we keep them in these pens, and they come through in good shape. In this way we have solved the problem of wintering our pigs so far as health is concerned.

Now, as to feeding. These sows live outside with small runs and we feed them on roots, bran, a little bit of meal (oats), and some hay. We have racks the same as you make for sheep or cattle, and we put in these racks clover and alfalfa, and it is wonderful the amount they will eat—from three to five pounds per day. They leave some of the coarser stems. In addition we feed from three to five pounds roots, and from one to three pounds meal, according to the size of the sow and

according to the date or period in the winter. We start the sows off with about a pound and gradually increase until they are getting four and sometimes five pounds roots, and from one to three pounds meal, according to the size of the sow and the dairy cow, must have a good supply of nutritious feed if it is going to be kept in shape to yield a large amount of milk for the little ones when they come, and the sow that has not a lot of milk when the little ones come will not prove a satisfactory breeder.

We have also kept our pigs in first-class pens, but this method of housing has proved more satisfactory than well warmed, well ventilated and well lighted pens. We found these pens satisfactory for summer use, especially the V shaped one for farrowing sows. We also use them in hot weather by raising them on posts, and where there are no trees for shelter and not as much water as you would like we have found that a very good way. Raise the house on posts about three feet high and put a couple of planks side by side for the pigs to run up into the pen, and if it is hot dry weather they will lie underneath, and if it is cold and damp they will run up into the pen.

Q.—Are these cabins floored?

A.—Yes, for feeding pigs in summer these cabins are quite satisfactory. We have tried them for feeding pigs outside in winter, but they are unsatisfactory. Some four or five years ago we built a small piggery in such a way that we could vary the internal construction to a very great extent. We could try fifteen different ways of ventilation, and after we tried the results in this small piggery for a number of years, in 1910 we built a large piggery which is probably as good a looking piggery as you will find in Canada. There is a piggery built from our plans at the Asylum at London. It was built this year. In erecting this piggery we paid careful attention to all the requirements of good pig housing. The requirements of good pig housing are practically the same as the requirments of good man housing. What you would like to have in your house you ought to have in your piggery, and you ought to have in your cow barn also. I do not mean the furniture, but the building peculiarities. For instance, you should have lots of light. In fact, your live stock require more light than you are usually satisfied to get along with in your own house. In our piggery we usually have lots of light. It is 120 feet long and the windows are quite close together in the south, east and west sides. The walls are built of two boards and an air space with four or five papers between. You ought to put four or five, but we only put three. One was a thick paper which is supposed to be equal to 28 ply of tar paper. I did not believe the agent, but it is a good paper, and it has served its purpose very well. The walls are just two boards thick, and there is an air space of six inches between them with battens on the outside and a V joint inside. It is ceiled, to prevent the collection of dust. I do not say that every farmer should put on a ceiling, but if he does he will have a more comfortable piggery. If he wishes straw on to top with slabs instead of boards he will have more comfortable conditions. It has good drainage, and the floor of every pen drains to a common centre. There are about twenty pens; the feed room is in the centre. Some of the pens are arranged for sows to farrow and some for feeders. This pen for sows to farrow has an iron guard which stands eight or ten inches from the floor and about the same distance from the wall, and the whole floor slopes towards a small gutter that collects any moisture or water, so that the floor is always dry. When the little chaps come first they are apt to nose into the straw, and we have wooden floors so that they will not be lying on the cold cement floor. We have a pen for feeding about six feet square surrounded

with cement to save bedding. It also has perfect drainage. The door is controlled by a rope, so that a man can let them out as he wishes and the window is so arranged so that it can be dropped and have an extra supply of air. The ventilation of any building is, in my opinion, one of the most important factors making for success in live stock operations. Many a farmer finds himself with his cattle wrong or his pigs dying just from lack of ventilation. How many of us have seen an old log barn or old wooden barn with healthy cattle in it due to the abundance of air which gets in, in spite of every effort of the farmer. Take your good stone basement stables, with tightly wedged in windows, and nothing but a little hole at the top for ventilation, and how many tuberculous cattle do we find in such conditions? I could name half a dozen within a half-mile of this town to-day where every effort is made to keep animals comfortable and where they lack ventilation. · You must have ventilation to get the best results. You cannot have a few cattle in the stable and lack of ventilation at the same time. You must have a circulation of air in order to keep them in perfect health. We have found the Rutherford system of ventilation to be the best. We tried fifteen or sixteen different ways of ventilating piggeries before we installed this plant. Last winter was the first time this piggery was in existence, and although we had a stove in the feed room, and we had sometimes many and sometimes few pigs, yet the walls and ceilings were always dry, and that means good ventilation. You cannot have dry walls, no matter how they are constructed, unless you have good ventilation. If you have a wall made of pure stone or pure cement with no lining inside, or if you have a wall made of two or three ply of lumber without an air space between, you know that such a wall is always covered to a greater or less extent with moisture. But this piggery was always dry, due to this method of ventilation. The air comes in at the floor, circulates through and goes out through the apex of the roof. This shaft is constructed of two boards. That is not absolutely necessary, as it can be constructed of one board; but it means dripping more or less if you only have one board, and if you make the walls of the shaft of two boards and an air space they will never drip. The air is controlled by a little damper which can be handled from the ground, and it is a necessary part of the system, because, as you know, temperatures vary. Last Saturday it was twenty-three below zero, and the Saturday before it was somewhere about fifty-seven above zero—a difference of eighty degrees. The circulation of air necessary when there is a temperature of 57 above or 23 below is very different. When the temperature outside is very low, the circulation is much more rapid, therefore the opening required is very much smaller, and to control that we must have this device to regulate the air.

This diagram shows the arrangement for drainage; it is carried off to a tank which is right near the pit where we put the manure. Once in a while we use a pail and dip the fluid over into the solid manure, where it is absorbed almost entirely, and it is carried off to the field, so that we lose no liquid manure. The tank is also fixed in such a way that we can put a small trough from the drain which carries off the water, so that if we want to wash out that piggery all we have to do is to put a little trough there, and we can wash the water down into the sewer. If you have abundance of straw you can absorb all the liquid manure, but it is cheaper to let it run off in this way.

This piggery is expensive in a way. It is capable of accommodating about 125 pigs, and has feed room and everything in connection. Over top we have our feed storage accommodation with bins which run down to our chutes, and barrels for mixing our feeds, and below the feed room we have a cellar for the roots. The

whole piggery cost less than $5,000. It costs us between $18 and $20 a pig for housing, and if you take 5 or 6 or 8 per cent. on that you will find how much it costs us to house each pig a year, and that has to be considered in feeding pigs. When we have to pay $1.50 a hundred for feed and get only about $7 a hundred for pork one has to calculate pretty close to make a profit these times, but we have been able to do it right through in spite of the adverse conditions.

Why not give the pig a less comfortable home to live in? We have tried many ways of keeping them in winter, and we have found that giving them comfortable quarters will pay. It costs us about two cents a pound more to produce pork under the same conditions as these sows were housed than when they were in good houses like these. This accommodation is for farrowing sows and feeding pigs. We have in conjunction with this a large shed into which the sows may be brought when it is thought advisable to have them in. Once in a while the sow gets a little the worse of wear among the bunch, and we bring her in. We have had pigs in this pen from the age of three weeks until three months, and they are doing well, so that it is suitable for young pigs as well as older or feeding pigs.

The raising of small pigs in winter is a most difficult proposition. I am not sure that this piggery will solve the problem for us, but I am hopeful it will. We are going to try it this year, and I am hopeful it is going to enable us to have the sows farrow any season of the year we like, and as a rule we like pigs to come in April or the latter part of March, not earlier than the 10th March, and any time after that till about the 10th April, and then come again in September. By having our litters come at that season of the year we get the pigs going before it is too cold in the fall or too hot in the summer. We do have litters come at different times in the year, but as a rule the farmer who wants to do feeding wants to have his litters come at these seasons of the year in order to get the best results.

The pigs can be fed at a profit, provided the farmer takes advantage of all the methods which are at his disposal and uses the best judgment in getting the pork produced. In the first place we find that to produce pork cheaply we must in the summer time make the greatest possible use of pasture. I do not mean that you should let them run over all the land. On the contrary, we have found that a limited amount of pasture is first-class, and an unlimited amount of pasture is unsatisfactory and unprofitable. A small piece is best, just enough that they will have as much green feed as will enable them to make the best use of the meal that they are being fed. You cannot take eight or nine months to feed a pig and make any money out of it. You must ship them right through, and to do that you must give that combination of feed which will enable the pig to lay on flesh with the greatest amount of speed and ease. You can compel a pig to put on flesh, but you may do it with a great expense to yourself. If you give him too much room he will run it off, and if you give him too small room he will not have enough exercise to digest his food properly. Do not compel him to eat corn only, and do not expect him to eat barley only; give him a mixture; peas, barley, oats and corn will be better. He likes a mixture; he does not want barley to-day, and barley and shorts to-morrow, or barley and peas the next day. He wants some mixture, and you must have it in moderate quantity. Feed the very small pigs four or five times a day, and when they get older three times will do. They should never be fed less than three times. The sows outside are fed twice a day, night and morning. In the same way utilize the fallen apples and tops of things that come from the garden. These things keep the pig in good shape. In the winter we haven't these things, and we make up for them with roots. On this twelve acres that we

use as a pig farm we follow the three years' rotation. We have about four acres of green feed which we cut and feed to the pigs, and four acres of pasture, which is divided into a number of small ones, but in some cases fairly large ones for the sows; and we have four acres of roots—mangels and turnips. We use a mixture of peas and oats, and we seed it down to alfalfa and red timothy. When we started on that field ten years ago we got small crops from it, but now it has been three times under that rotation, and the crops of roots and grass that we get are simply wonderful to look at. It is nothing for us to get twenty-five to thirty tons of turnips and mangels from what was once a sandhill, so you see the pig improves the productiveness of the soil. In winter and summer we make use of the skim-milk that we secure from our small herd of cows. We have a herd of forty or fifty, and we manufacture our butter and cheese on the farm; so we have more or less skim-milk which we use for pig-feeding operations. We have fed skim-milk to our pigs, ranging from one pound up to about seventeen pounds a day—all the milk the pigs would drink—and we have estimated what that skim-milk was worth. We have found that one or two pounds do not have a very great effect, although it probably helps the digestive organs a little bit; but when we get from three to three and a half pounds per day per pig we found it had a most salutary effect on the digestive organs. In fact, when we were feeding from three to three and a half pounds of skim-milk it was worth half as much, as though one hundred pounds skim-milk was worth forty-five pounds shorts. Then as we gradually increased the amount of skim-milk until we were feeding sixteen to seventeen pounds a day, when we found that one hundred pounds was worth only about ten pounds shorts. To get the best value from your skim-milk you must feed it in moderate quantities. You can feed them three and a half or four pounds a day and anything else, but you must supplement it with something else. As a rule, it takes four and a half to five pounds of meal to produce a pound of milk, and with feeding four and a half pounds skim-milk we were able to make two pounds.

We have never had sufficient whey to conduct any extensive tests on this line. The farmer gets rotten whey from some cheese factories. Taking whey as a whole, sweet or sour, we find it is worth just about half the price of skim-milk; one hundred pounds whey is worth fifty pounds skim milk. If it is fed too freely it has an injurious effect, just as it has when fed to calves. After the whey and skim-milk come roots. By roots I mean mangels, sugar beets, turnips, and we might put potatoes in the same class. Beginning with the potato, we have found it is a very valuable food for pigs, but when we have to pay $1.75 per bushel we do not feed very many of them to pigs. We find, to get the best results, it pays to cook them. After they are cooked, mix the meal with them, and feed it in a fairly thick slop. You will be astonished at the way the pigs will take it, and the progress they make. Potatoes will give you the biggest gains of anything that I know of. After that come sugar beets: they should be fed raw, and it is unnecessary to cook them. They should be pulped, mixed with the meal and fed dry to breeding stock and slightly damp to feeders. Warming the feed in midwinter will have a good effect. Mangels are worth about one-half as much as sugar beets. The pigs will do well on them, and for breeding stock they are even better than sugar beets, because we do not want so much fat. Mangels are first-class pig-feed, and should also be fed raw. If we are feeding the sows outside we only throw them two or three mangels, whole, to four or five sows. If it is cold, they get frozen and they cannot handle them, and then we pulp them and feed with the dry meal. If it is very cold we mix the meal with the roots and pour some hot water on them and pour it into the trough.

Turnips are fed to a very small extent to pigs in the east. I know of no root that will give better results in the way of bacon-producing value than will the turnip. It must be fed cooked. Like the potato, it does not suit the digestive organs of the pig unless it is cooked. We cook them about one-half hour, and then mix them with the meal and feed hot.

Q.—Under what head would you put the yellow mangel?

A.—We have been growing the sugar mangel a great many years, and when we started to analyse it twelve or thirteen years ago we found that it was about half-way between the mangel and the sugar beet. It gradually started to go down in feeding value, until about three years ago we found it was the same as the mangel. We did not get quite as much returns as from the mangel. At any rate I would rather grow some variety that would give me a good, large yield; the sugar beet is all right yet.

Q.—The sugar beet is put up in packages?

A.—The sugar mangel is commonly called Half Sugar Rosie or Half Sugar White.

Q.—Is the sugar beet the little beet that is grown to be manufactured into sugar?

A.—Yes; there are varieties that are known as Forage Sugar beet. They are a little bit larger, but they are very rich in feed value. Our mangels cost us about $2 a ton in the cellar, and the sugar beets cost $3.50; but they are worth twice as much for feeding to either dairy cattle or pigs or for beef.

Q.—What about the yield?

A.—The yield is considerably less. In mangels we expect to get 20 to 35 tons; in sugar beets from 12 to 16 or 17 tons. It was only 10 tons this year.

Q.—Are sugar beets good for milch cows?

A.—Yes.

Q.—It makes the milk too strong.

A.—I am not talking about the flavor of the milk; I am talking about the quantity. We did not notice any effect on the quality of the milk.

Q.—What do you do with the milk?

A.—Make it into butter. Of course we were milking probably forty or fifty cows and feeding different beets, and feeding it all together. I never knew it to affect the quality of the milk; they certainly have a good effect on the milk-producing powers of the cow. They are very palatable and seem to help the digestive organs of the cow a lot.

Q.—Either the beet or top will spoil the milk.

A.—I never feed the tops. Now, as to the relative merits of the various meals, one must necessarily feed the most readily available. If you include as part of your ration some good heavy meal, such as barley or corn or frozen wheat or oat chop or feed flour, and supplement that with some very palatable stuff, such as oilcake meal or shorts or oats or a little bit of feed flour, these meals will give you good results, but you must have as a basis a good heavy meal. Pigs do not like light meal, and they do not like a heavy meal exclusively. If you are feeding corn, add some bran or shorts to it, or a little bit of crushed oats. They will do well on pure crushed oats. A mixture is the best thing to give a pig, and the mixture includes both heavy and light meal, and that mixture should include from 1-2 to 2-5 heavy meal to about 1-3 light meal. Grind it fine, the more finely the meal is ground, and the more frequently the pig is fed, the more rapid will be the gain. Of course, it costs a little more to grind it, and it costs a little more to feed it more frequently, but feed

the pig more than twice a day. You must feed it three times to get good results, and if you feed it four times you get better results still.

The residue from slaughter houses and all that kind of thing helps out in the pig-feeding business. We have never used it on the Experimental Farm, because there are things a farmer cannot handle, but for the benefit of those who can get hold of that kind of thing, and I know from observation in the district at Ottawa that that feed will give most excellent results. I know on the other side of us at the Experimental Farm we have men who are feeding pigs very extensively, and they use these by-products almost exclusively, and they get quick returns at low cost.

While the pig-feeding business is not quite so much in favor in Ontario as it was in the past, I think there is room for an increase, and I think the farmers are making a mistake in going out of it. It is true we blame the packer, and say he does not give us a high enough price when pigs are plentiful. We must study the most economical method of feeding and breeding. We have the Yorkshire, the Tamworth and the Berkshire. I have no hesitancy in saying they will make a profit every year, and make a good profit on the average. Some years may be a little lower than others, but, generally speaking, when the price of pork is down feeds are cheap, and when feeds are high the price of pork is high. This present juncture is about as bad as you can get. When you can only get 7c. for pork it is pretty hard to make things go well with the present prices of feed. We are producing pork at Ottawa to-day at about 5½ cents a pound with meal that costs us 7c., and we are selling that pork at 7c. a pound, so you see there is a fair margin. It is by means of the roots and skim-milk and the most judicious methods of feeding that we are able to get such satisfactory returns.

Q.—In starting out to feed your young broods of pigs, do you feed it warm or cold?

A.—We try to feed it uniform, either way. We do not fed it warm to-day and cool to-morrow, or sweet to-day and sour to-morrow.

Q.—Do you put a little water with the milk?

A.—Yes, it is better to have a little water in it.

Q.—For growing pigs that are taking heavy chop, they do not require so much milk?

A.—No. For the little chaps feed as much as six or seven pounds a day, with a small amount of fine shorts or shorts and feed flour and oilcake meal.

Q.—What value do you put on your roots?

A.—$2 a ton for mangels and turnips. We get them into our cellar for less than that.

Q.—I do not think that is enough.

A.—I would say it is not enough for this year.

Q.—You would not like to sell them for that?

A.—I would not like to sell them at any price. A great many farmers came to the fat stock show with their dairy cows, and we charged them $3 a ton. I think $2 a ton is a fair price for feeding to live stock.

Q.—You say pork is $7 a hundred there now?

A.—Yes.

Q.—It is only $6 here.

A.—You are not as fortunate as we are. Probably feed is dearer with us than with you.

Q.—What is the difference in the feeding value of skim and buttermilk?

A.—The same, providing you feed them in the same condition. Feeding sour milk and sweet milk is injurious. You must feed either one or the other.

Q.—What percentage of deaths do you have in the hogs you feed down there?

A.—Once in a while a pig dies. I would not like to say what the percentage is.

Q.—What is the cause?

A.—Sometimes they get worms; sometimes indigestion.

Q.—No lung trouble?

A.—We have not had it for four or five years; we did have a lot of it.

Q.—What was your remedy?

A.—Ventilation. Five or six years ago we were having a fearful time with our pigs. We had an old piggery that was built twenty years ago. When I went there I found there were about a dozen pigs in it, and they looked as if they wanted to get out. We tried to improve it. I cut windows to let in the ventilation; but at last we tore it down, and built a large shed and let the pigs run loose in it, and that is an improvement on the old one. Then I turned them outside, and that was better still, and we set to work to erect a suitable building for feeding them. Then we built this piggery, and I think it is going to be all right. The other day, without any warning, their Royal Highnesses the Duke and Duchess of Connaught visited the farm, and I took them through the piggery. Her Royal Highness said she would not like to go in. I said that it would not soil her robes, and after she went through she was delighted, as every thing was so clean and nice. We will be only to glad to have you come and visit us, and I will be glad to go around with you myself or have some one go.

Q.—When do you like to have your hogs on the market?

A.—From six to seven months; sometimes we get them through in six, and others we get them through in seven. The results I have given you are not the results of one experiment, but hundreds, so that I have the average as to the cost of feeding, and so on.

Q.—Do you turn the sows out in these shacks after they have farrowed?

A.—As long as the pigs are small we keep them indoors. In the spring, after it is fairly warm, we put them in the shacks, as they do better outside than in. We have special accommodation for the sows inside, and we have two pens that we can warm up.

NOMINATING COMMITTEE.

The following were elected as a Nominating Committee: J. MacHoover, H. White, T. O'Flynn, T. Brunskill, Frank Boyes.

ADDRESS OF WELCOME.

Dr. J. B. Coleridge, Mayor of Ingersoll, was introduced and said:

Upon a former occasion I was pressed into service by my predecessor and was greatly surprised to meet so many ladies; this speaks well for the interests of this county. Ingersoll and surrounding country is the home of the dairy industry in Oxford, and in fact Ontario; the first cheese made in Ontario was made near Ingersoll. Many tell us that the great West is the only part of the Dominion

worth living in, but when the dairy industries are considered along with the others we have one of the most fertile and inviting districts in the country. Ontario is mother to the West.

We, in Canada, have a heritage over which we can be justly proud. We are too apt to forget that our acreage is larger than that of the United States. Remember our large fertile areas, our large inland seas, our dairy products, our grains, our forests and mines, and then consider our future as regards the Empire. Let me remind you that but a few years ago the Niagara Falls were nothing more than a huge cataract, but to-day it is a great harnessed power which is lighting our towns, turning the wheels of industries, and soon will be lighting our houses and barns upon the farms.

SOME DAIRY HISTORY.

J. A. Ruddick, Dominion Dairy Commissioner, Ottawa.

Since I came into the hall I have been asked to say a few words to make up for the deficiency in the programme through other speakers not being able to arrive. It occurred to me that it might be of some interest if I referred very briefly to some of the lines of investigation which I have been carrying on during the past year or so with regard to dairying in this country. The origin of the dairy industry in this country goes back farther than most of us are aware of.

If we search the pages of history carefully we will find that even the Norsemen who came to this country early in the tenth century are said to have brought live stock with them. Of course, they made no permanent settlement, so it does not count in the history of dairying to any great extent. The next record that I can find is about 1518, when Baron De Leury came over from France with the object of founding a colony somewhere in the New World, and he landed his live stock on Sable Island, that bleak, inhospitable sand bank off the shores of Nova Scotia. He went back to France, and left the cattle and the horses there, and the cattle remained and multiplied, and were there in 1598 when De La Roche came along with his convict colony and marooned them on the island. While he looked for a suitable location, his ships were driven so far to the eastward that he went back to France. These men were said to have subsisted on the flesh of these cows. The cattle remained on the island until they were finally all killed off by the Puritans, who organized expeditions for that purpose, but the ponies are there to this day, and a large number are taken off once in a while.

The first introduction of cows into what is now Canada took place in 1606, at Port Royal, Nova Scotia. That was hardly a permanent settlement, because it was destroyed by the Virginians who came up there in 1613 and wiped them out. If any cattle were left no doubt the Indians soon made away with such easy game.

Undoubtedly the first permanent introduction of domestic cattle on this continent north of the Gulf of Mexico was made by Champlain in 1608 or 1610. The Spaniards had cattle south of the Gulf of Mexico in the early days. In 1610 Champlain wrote that he cut hay for the cattle in certain places, and a map was published in 1613 showing he place where they cut the hay for the cattle. In 1628 there was a large dairy at Captimont, about thirty miles below Quebec, where a large dairy farm exists to this day, and that was undoubtedly the first dairy farm in Canada. It was begun somewhere between 1628-29. The French-Canadian

cattle that are known to-day as a registered breed are descendants of these cattle brought over in those early days. They were added to in 1660, by the French Minister, Colbert, who sent over some of the best breeds of Normandy and Brittany at that time, and that is where our French-Canadian cattle come from. In the Province of Ontario, after the Treaty of Ryswick, when La Motte Cadillac went to Detroit, they took young calves with them, and these were taken by the northern route. These were undoubtedly the first domestic cattle sent into Ontario. A settlement was made on the other side of the Detroit River at first, and after a short time they came to this side of the river, and they had a considerable number of cattle there in the early days. The real introduction of cows in Ontario took place in those memorable years of 1783, 1784 and 1785, the coming of the U. E. Loyalists. The Government distributed cows and bulls among several farmers along the St. Lawrence River and Niagara district, but probably the first real dairyman in Western Ontario was the late Col. Talbot, at Port Talbot, who settled there in 1803, and in a short time had a large herd, and is said to have made the butter with his own hands for many years. He was the pioneer dairyman of Western Ontario. Cattle were introduced in the north in the Huron district, which was opened up by the Canada Company, but that settlement did not take place until 1827 or 1830. Then, as we go west, the first authentic introduction of cattle in the Red River district was 1823. There is a record that Lord Selkirk sent out two cows and a bull from Scotland by way of York Factory in 1813, but there is no record of their having arrived at Red River. But in 1823 a large herd of over 300 cattle were driven up from the south and sold to the settlers in the Red River district, and by 1837 these cattle had been taken by the Hudson Bay Co. to their posts away down the Mackenzie River and over into British Columbia. There are several records mentioned of cows in the Hudson Bay correspondence in 1837 and following years. In 1843 another interesting introduction was made. The Hudson's Bay Company at that time were established on the Columbia River at Fort Vancouver in what is now the State of Washington. They had a very large farm there, and had many hundreds of cattle in charge of Dr. McLaughlin. They felt then that the boundary question was likely to be settled. The joint occupation of what was then known as the Oregon territory was likely to be ended, and they had some idea of where the boundary was to be, and they wanted to be on the British side, so they moved up and established Port Victoria where the City of Victoria now stands, and in 1846 they had two farms there, with sixty or seventy cows on each. They made butter and supplied it to the northern posts, and traded with the Russians who occupied Alaska. These cattle came from California; they were driven up overland and brought to the Post at Vancouver on the Columbia River. They had originally been brought to California by the Mission Fathers, and were undoubtedly of Spanish origin. Among the cattle brought into Ontario there were undoubtedly some Dutch strains from Pennsylvania and from New York State; so you see that the common cow of Canada has a very mixed ancestry.

The introduction of the factory system is an interesting phase in the development of this country. I would like to correct one idea that seems to be prevalent. The dairy industry did not begin with the cheese-factory system. There were a million milch cows in Canada at Confederation. There were a large number of cows in this district at the time factories were established, and if you take into consideration the rapidity with which factories sprung up you will realize that the cows could not have been produced all at once.

It is well known to every person in Oxford County that the first cheese factory in Canada was established down near Burgessville by Harvey Farrington. The

following year a factory was built by Mr. Harris near here, and another one by Mr. Andy Smith, and one by Mr. John Adams, and then the Galloway factory was built in 1865. There was a factory started in the Province of Quebec in that same year, and the same factory is still in operation as a cheese factory. I was talking to a man the other day, who, as a small boy, got up at three o'clock in the morning for the sake of having the honor of delivering the first can of milk for that factory, and he is still a milkman. As a matter of fact that factory was built in 1864, but was not operated until 1865. Quebec has to have the credit for the creameries, because the first three or four were started in the County of Huntingdon in 1873. They were all operated on what was known as the Swartz system, and the milk was put in large, shallow pans and water running around them, and the skimming was done in the ordinary way. In 1875 Mr. Ingles started a creamery at Teeswater, and that, I think, was the first creamery in Ontario, because in the report of the Ontario Agricultural Commission, published in 1880, I find the evidence of Mr. Ingles, in which he tells about his first experience in 1878. One was started at Breslau the next year, and after that another was started as St. Jacob's. Afterwards these creameries were operated on the cream-gathering plan.

The introduction of the first cream separator is of some importance. As far as I can learn, the first cream separator in America in a creamery was used at St. Mary's, below Quebec. I wrote to the manufacturer of the separator in Copenhagen, Denmark, and he replied that the separator was shipped on April 22nd, 1882, and that it was No. 72, and that the first commercial machine they made was No. 71, and they thought it was the first machine shipped to America. There were some separators in New York before that. There was a big dairy exhibition held in New York in 1879, and some separators were on exhibition, and I am under the impression that one or two were used on private estates, one at Deerfield; but the first commercial separator used in America was used below Quebec at St. Mary's.

The first separator used in Ontario was at Sprague's factory, in Prince Edward County, in 1884; and that is not so very long to look back to. In 1867 it was estimated that there were over two hundred cheese factories in Ontario. In 1865 the first factory was started in the Brockville section, and in 1866 in the Belleville section, and then a factory was started in Glengarry in 1867. There is no doubt there was a big dairying industry in Canada before the factory system was introduced. That was a very important phase in the development of the industry, because previous to the introduction of the factory system there was no good way of marketing the dairy produce. Dairy butter was a drug on the market. The production was limited by the amount of work which the farmers' wives and daughters could give on the farm. The business was in need of something to stimulate it or it would languish entirely, and the factory system came in just at the right time.

I can remember on my father's farm, two miles west of here, in the summer of 1866, that the milk hauler came twice a day from Adam's factory in Nissouri, which was twelve miles away. In those days the milk was always taken to the cheese factory twice a day, and in some cases it was manufactured into cheese twice a day, and it was cooled in the vat. They had no large tanks and ice water to cool it with. Many a night I have spent at the factory stirring the milk with a big dipper until twelve o'clock at night. It was a man in eastern Ontario who conceived the idea of taking in the milk only once a day. Mr. Smith, in Norwich, built a big tank, and put it on the waggon and collected it for the factory in that way, something in the same manner as they haul cream to the creameries now. However, that plan did not work very well. The cheesemakers who have

been at the business for a long time remember many changes that have come in all these years. I will never forget the years that I was learning to make cheese. I am not quite sure when I learned to make cheese, because I was around the factory when I was very small, and I would rather work around the factory than on the farm. If any of the boys wanted help I was willing to work for them without any pay. When I started in in earnest in Norfolk County in 1879 and 1880, I remember Professor Arnold showed us a new way of making cheese. Up to that time we used to get finished by noon. We used to give it three-quarters of an inch in the whey, and then we would stir like the mischief for a few minutes and put the salt on it and put it in the press. Professor Arnold came along and changed all that, and then it was six o'clock before we got through. We did not think much of Professor Arnold at that time, but we know now that he was on the right track.

I would like to tell you something of the work that the Department of Agriculture at Ottawa is carrying on in your interest, but I am afraid I will not have time to go into that. I would like, however, to call attention to one particular phase of our work which I think is of importance to the farmer, particularly, and that is the cow-testing work that has been carried on for several years with a view of increasing the herds so as to increase the average yield of milk per cow. We find that it has created a great deal of interest in this work, and a large number of cows are being tested every year, but it seems to me that there should be far more than there are. There does not seem to be any good reason why practically every herd of cows in this country should not be tested. For some years we have offered to make arrangements at almost any factory, where a number of the patrons cared to have the individual cows tested, to pay for the testing, to provide all the necessary blank forms and to supply the chemicals so that the owners of herds have nothing to do but purchase the necessary bottles to keep the samples and a small scale for weighing the milk. We have not found the butter and cheese makers take up this work with as much enthusiasm as we thought they would. I think it would be in the interests of those managing factories to encourage this work. We hope to extend this plant of dairy record centres, and we have come to the conclusion that we will have our own men do all the testing. We will have an expert in charge who will do the work. I hope to see that work extended throughout Western Ontario. We are not going to chase after people very much more. We think we have done sufficient work to demonstrate its value and practicability.

There is just one other point that I will refer to, and that is the work which we do in connection with the exporting of dairy produce. I doubt if many people in this audience, or many farmers, realize fully the amount of work which is being done for them in that way. If I was asked to-day to give you the temperature at which almost any of the shipment of cheese or butter was carried across the ocean during the past five or six years, and if you gave me the marks of the consignments and the name of the ship it was carried on, I could give you that record. We often have these records of products shipped from Vancouver to Australia, and that is only one item in the work of cargo instruction that we do. We have a staff of men at Montreal who make a thorough examination of the shipments of butter and cheese, meats and apples and any perishable products that are shipped, and they can tell you in what part of the steamer it was stowed, and what the temperature was during the whole voyage, because we keep thermometers in every compartment. We have men travelling over the refrigerator car routes who take the temperature of the butter when it is delivered, and the same packages are tested at Montreal; and if we find that the temperature is so warm that we have reason to believe that

the car has not been properly iced, or if the car arrives at Montreal without any ice, then the railroad draws no subsidy for the operation of the car. The handling of the butter and cheese on the docks at Montreal is watched very carefully, and we have revolutionized the handling of the butter and cheese. In former days the cheese were piled on a big net, perhaps twenty-five boxes at a time, and the whole thing was squeezed together and a great many boxes were broken and crushed; but to-day the cheese are loaded on platforms and they are put on board the ship in a very careful manner. If one of our men reports any of these carters or stevedores as handling cheese roughly and breaking boxes they would be discharged by the Company, and many of them have been discharged. At the ports of London, Bristol, Manchester and Liverpool we have men who watch the steamships and watch the cargoes, and take the records and send them to Ottawa. If the cheese is loaded in good condition, cool and not showing signs of heating, and if it comes out on the other side in a heated condition, we know where to place the blame. Before we had these inspectors we could not do that, and I think the cheese and butter makers realize that this is a considerable advantage to the trade.

Ten years ago there was hardly any forced ventilation on the steamers, but to-day there is hardly a ship drawing out of Montreal that has not forced ventilation, and that has all been brought about by these reports from time to time as to the damaged condition of the cheese and butter that was carried in unventilated holds. I am telling you these things so that you will have some idea of the kind of work we are doing in a very quiet way, and it is having a very important effect on the fruit and dairy trade in this country. That is not the only kind of work which the department of which I have charge is carrying on, but that is as much as I will say to-night, and I thank you very much for your patient hearing.

OUR DAIRY PRODUCTS IN THE OLD COUNTRY.

G. G. Publow, Chief Dairy Instructor for Eastern Ontario, Kingston.

I am pleased to be with you to-night and to bring you greetings from the sister Association, the Eastern Dairymen's Association, whose Convention was held at Campbellford last week and to wish you a prosperous New Year.

The subject I am to speak about is "Our Dairy Products in the Old Country." It was my good fortune to have the privilege of visiting Britain last year, and I regret very much that my good friend Mr. Herns was not able to be with me. It would have been a good thing for me, and I am sure that it would have been a good thing for him. If we had been there together we would have been more likely to pick up information than in the case of one alone. However, as the next best thing, I took my wife, and she often tells me that if she had not been with me I would have seen nothing but cheese during the whole time I was there.

My object in going to the Old Country was to see how our cheese suited the market over there, to look into the defects that had been reported with regard to our dairy products, to see if the cheese we were producing was the type of cheese that was in the greatest demand at the best prices, to see how our goods were handled in that country, and to look into the future prospects for the dairying industry.

The first thing I did on my arrival in the Old Country was to look into the transportation problem and the manner in which our goods were handled by the

shipping Companies, as to the breakages of boxes, etc. I believe that our goods are as carefully handled by the transportation companies on the other side as they are on this side, and it would appear to me as though as much breakage takes place between the factories and the steamships at Montreal, as there is between the port at Montreal and the dealers in the Old Country. I found that the steamship Companies were taking special care in handling our produce, and when I enquired the reason for this they said, "Well, we are responsible for any breakage that takes place, and we have to make good before the cheese are sent out to the retailers." In a great many cases I found the transportation companies busy reboxing the cheese or coopering them before they sent them out. As a rule our cheese are stored in the transportation company's warehouse, and samples only are taken to the importers' salesrooms where sales are made according to samples, and delivery is given to the retail men by the transportation company. Of all the places visited I found the best facilities for storing cheese at the Commercial Surrey Docks, London. The facilities there are all that could be desired. There appeared to be a larger percentage of broken boxes at Bristol than at any other place, this being accounted for by the extra handling the cheese received as a result of having to be reshipped by train, and consequently more complaints regarding the frailty of our cheese boxes were made to me at this place.

I visited most of the large cheese centres and saw cheese from nearly every part of Canada, and had the privilege of comparing them with the cheese made in the Old Country and with cheese from other countries as well, and it will be pleasing for you to know that our best cheese compared very favorably with the best makes from other countries. The question has been asked "How do our instructors know what instructions to give the cheese-makers; are they well enough posted as to the needs of the people in the Old Country so as to give definite information." While Mr. Herns or myself had never been to the Old Country, we took our information largely from the Montreal cheese exporters, and I will say to you now that we are on the right track, as the type of cheese in greatest demand in the Old Country is practically our own best type of cheese. If we get all of our cheese as good as our best we need have no fear of competition from other countries; so it is up to us to try and get all the cheese as good as our best. In addition to making enquiries from the importers I followed the cheese to the retail counters, and that is where I got my best information as to what the consumers wanted. In practically all the shops I visited I found the cheese were sold over the counter, according to merit, and if some such system was adopted in this country I think it would be a good thing for the trade. When I arrived in the Old Country (in July) I found cheddar cheese retailing at from sixpence to ninepence per pound, and some of the cheese which were sold at the same price on Canadian cheese boards, were being retailed there at a difference of threepence per pound. It is quite evident that the grading is largely done by the retail men. The type of cheese that was being sold for the highest price, in practically all the shops I visited, was a mild flavored, close, smooth cutting, meaty cheese, just such a quality as is shown in the prize winning cheese at this exhibition.

I found that our best cheese were sold right along with the best English and Scotch cheese. In fact, the cheese are not sold as English or Scotch, but are sold as finest cheddars. In some stores they sold as many as fifty boxes a day, and they are all prepared the first thing in the morning. The shopkeepers seem to know how many they will sell during the day, and the first thing they do is to prepare them for the counter. The bandages are taken off and the cheese cut in half or

quarters. If, when the merchant has cut the cheese he finds it is of best quality, it is then ticketed at best market price, and if the next one he cuts is of the same quality it is placed at the same price, but if it be of an inferior quality, such as a little open in make or not clean in flavor, or the texture a little coarse, it is put at a lower price. In no case did I find the merchants trying to dispose of inferior quality at best prices.

Some of the merchants handle only finest quality of cheese, and if any of those purchased as finest are found to be of inferior quality they are returned to the importers. I found from enquiry that the shopkeepers were well satisfied with the quality of our best cheese. One very common complaint regarding the quality of our cheese was that they were too lean, and not showing enough meat. Some of them were of the opinion that the leanness was due to some of the fat having been removed from the milk, and I had some difficulty in convincing them that such was not the case, but that the defect was due to lack of moisture and insufficient curing, and in some cases to over-salting. I am satisfied that the leanness was not due to lack of fat. This defect was probably more noticeable this year than formerly, as the cheese were placed on the market shortly after their arrival, owing to the scarcity and light stocks on hand. I found that factorymen in the West, as well as those in the East, have been tempted to let their goods go out rather early, and there is no doubt in my mind but what they are making a serious mistake in doing this. This fact was very forcibly impressed upon me when comparing the quality of our cheese with the English and Scotch makes, as well as the makes from New Zealand, as very few of the cheese from those countries are placed on the market under the age of two months, and as a result are much better cured, give better satisfaction to the trade in general, and demand about two shillings a hundred-weight more in price. English and Scotch makers lay considerable stress on having their cheese in best condition for the market before having them shipped, and this is one of the factors which enables them to get a higher price.

A number of merchants complained of our cheese being too heavy. They are not particularly anxious for cheese weighing more than eighty pounds. That weight seems to be the most popular. Some merchants prefer a lighter weight cheese. I also found a few merchants who are anxious for cheese weighing one hundred pounds, but they are usually wanted for window advertising purposes, and cheese intended for this purpose require to be particularly well finished, and to have clean, sound rinds. Many of our cheese were lacking in this respect, and complaint was made that they did not strip well.

I found that not only were our cheese being sold in the large cities and towns, but they were sold in the country villages as well. When I visited the Cheddar Valley (the home of English cheddar cheese) I found cheese from this Ingersoll section being retailed there, and it was giving good satisfaction. The best cheese (of English make) I saw was at this place. I was very much surprised to find that there was only a small quantity of cheese made in the Cheddar Valley. When speaking to some of the farmers of this place they said that they had turned their attention to the city milk supply, as owing to the increased demand for milk and cream, the price realized per gallon was greater than if it had been made into cheese, and there was a saving in labour as well, and that they were not likely to go back to the manufacture of cheese.

I also gave the question of loss in weights, some special attention. In most cases five cheese were weighed at a time, which is the custom there. I found some lots running from ¾ of a lb. to 2 lbs. a box short. I also saw a few cheese

weighed singly which fell short from 3 to 5 lbs. a box, and this, of course, was not a natural shrinkage. Evidently they had been improperly weighed at the factories. Not much complaint is made if they do not go over one pound short. In fact, I was told that they rather expected it, and considered it a natural shrinkage; but when they fell short two and three pounds, and sometimes more, then there was trouble for some one, as, frequently, the margin of profit looked for was more than offset. It is probable that your cheese from the West hold out better than ours from the East; but we are not the only sinners in this respect, for I found cheese from this district that did not hold out. The lots from our Eastern section, which were running short, were generally found to be from factories that were following the practise of shipping to the hoops.

I also had the privilege of visiting several of the farms and dairies in Scotland, and had the opportunity of seeing the conditions under which the milk was being produced and manufactured, and there is no doubt that the English and Scotch makers have a great advantage over our Canadian makers, as they nearly all have full control of the milk supply. As a rule the cheese-maker pays the farmer a cheese rental for the cows, the farmer furnishes the feed, and the cheese-maker takes full charge of the herd for a year; the milking and caring for it, is under his supervision. The milk is not allowed to remain in the stable for any length of time after it is drawn, but is taken direct to the dairy where it is strained and cooled. There was every evidence that they realized the importance of cleanliness in connection with their work. I found the stables very clean, some of them being scrubbed twice a day. The cows were brushed and the udders washed, before milking. As a rule, the milking was done by women, and in some cases, I saw them washing their hands after milking a cow, before milking another, and this appeared to be their regular custom as they had been given no previous notice of my visit. I was anxious to see their every day conditions, for when comparing their make of cheese with ours, I was somewhat at a loss to know why it was that they could retain so much moisture and have the flavor remain sound. If there is one thing more than another that will impress you, when visiting those dairies, it is the thoroughness with which the makers do their work. They do well, what they know. When discussing with them their method of making, they laid special stress on having the milk work slow. They did not want it to work faster than three to three and a half hours. The curds are cut rather coarse; the curd knives used are similar to our old style ½ inch mesh. They heat slowly, and pay special attention to the raking and firming of the curds in the whey. They appear to aim at uniformity in size and neatness in finish. In fact, all of them were as well finished as the best at this show, to-day, which is saying a good deal. They press for three days. They are taken out of the hoops every morning and turned, and special care is taken to insure good rinds. This would appear to be very essential, as their cheese are taken to market without boxes. The output of each dairy is placed separately on the floor of the warehouse and sold in block, and being neatly finished and even in size, they look very attractive. Many of the dairies, owing to their good reputation, were bringing from two to four shillings a hundred weight more than the regular market price. I would advise factorymen here who are making a superior quality, to brand the cheese with the name of the factory and the district in which it is made, for the time is not far distant when you will be rewarded for your pains.

As the future outlook for our cheese on the English market I would say that if we study the tastes of the people and give them what they think most of, it appears to me as though the market would be almost unlimited. The thing for us

to do is to continue our work of education, for a clean, cool, milk supply, and have the curing-rooms of our factories so improved that the temperature can be controlled close to 60 degrees, and keep the cheese until they are sufficiently ripe to give a good account of themselves, thus, we will be doing the proper thing.

As previously stated, a very common complaint regarding our cheese was that they were too lean. This leanness was largely due to lack of moisture, due, no doubt, in many cases, to the manner in which the curd was handled, the milk being over-ripe when delivered to the factories, and to the over salting of the curds. I found the Scotch makers were salting their curds much lighter than we do. In August I found them salting one pound to fifty-six pounds of curd. Owing to conditions which prevail here it would hardly be safe for our makers to salt as lightly as this.

It looks to me as though we had not yet mastered the art of putting moisture in cheese, to the same extent as the English and Scotch makers, and I think we should give this matter more attention in the future, in fact, we intend holding special meetings for our cheese-makers in the East, to deal with this and other matters relating to the quality of the cheese.

In closing I wish to congratulate the makers on the splendid exhibit of cheese and butter at this Convention. I don't think I ever saw a better or more uniform lot together.

THE CHAIRMAN. We cannot emphasize too strongly the truth of what Mr. Publow has said. There is one feature he did not touch upon and that is the great loss in quantity by sending the milk too ripe. You all know that it took more milk this last summer to make a pound of cheese than it ever did before, and one reason for that was we had a very warm summer and the milk arrived at the factory in a riper condition than ever before, and it took more milk to make a pound of cheese.

REPORT OF COMPETITIONS ON CHEESE AND BUTTER.

PRIZE LIST.

	Score.	Amount.
September White Cheese—		
1st Prize, R. A. Thompson, Attwood (won for flavour)	97.65	$25 00
2nd " J. K. Brown, Ethel	97.65	15 00
3rd " D. Menzies, Molesworth	97.49	10 00
4th " W. S. Stocks, Britton	97.48	5 00
September Colored Cheese—		
1st Prize, John Francis, South Middleton	97.50	25 00
2nd " J. T. Donnelly, Sparta	97.20	15 00
3rd " D. Menzies, Molesworth	97.16	10 00
4th " H. W. Hamilton, Monkton	96.99	5 00
October White Cheese—		
1st Prize, W. S. Stocks, Britton	97.65	25 00
2nd " W. H. Hamilton, West Monkton	97.49	15 00
3rd " (tie) B. F. Howes, Attwood, and Geo. Empey, Newry	97.16	7 50
October Colored Cheese—		
1st Prize D. Menzies, Molesworth (cup)	97.82	25 00
2nd " B. F. Howes, Attwood	97.33	15 00
3rd " H. Youn, Palmerston	97.32	10 00
4th " H. Donnelly, Straffordville	96.98	5 00
1 56-*lb. Box, Butter—*		
1st Prize, E. M. Johnston, Innerkip	95.82	25 00
2nd " Wm. Waddell, Kerwood	95.65	15 00
3rd " H. W. Patrick, St. Thomas	95.16	10 00
4th " R. A. Thompson, Attwood	94.99	5 00

20 1-*lb. Prints, Butter*—				
1st Prize,	T. O'Flynn, Tavistock		96.49	15 00
2nd "	C. A. Barber, Woodstock		96.32	10 00
3rd "	E. M. Johnston, Innerkip		95.99	5 00
4th "	J. H. Martin, St. Leon, Quebec		95.98	3 00
56-*lb. Box October-make Butter*—				
1st Prize,	J. H. Martin, St. Leon, Quebec		96.33	25 00
2nd "	J. A. Logie, Paisley		93.49	15 00
3rd "	P. L. Doig, London		93.48	10 00
4th "	H. W. Patrick, St. Thomas		93.15	5 00
3 *Canadian Stilton Cheese*—				
1st Prize,	H. W. Hamilton, Monkton		97.49	8 00
2nd "	C. J. Donnelly, Scottsville		97.32	6 00
3rd "	R. A. Thompson, Attwood		97.15	4 00

SPECIAL PRIZES.

By the Heller & Merz Co., 22 Cliff St., New York—C. Richardson & Co., St. Mary's, Ont., Canadian Agents for Alderney Butter Color: $10.00 in Cash—To the buttermaker securing the highest score on butter in Class III. or IV., colored with Alderney Butter Color.—C. A. Barber, Woodstock, Ont.

$5.00 in cash—To the buttermaker securing the second highest score on butter in Class III. or IV., colored with Alderney Butter Color.—Wm. W. Waddell, Kerwood, Ont.

By the R. M. Ballantyne, Limited, Stratford, Ont., for D. H. Burrell & Co., Little Falls, N.Y., manufacturers of Chr. Hansen's Rennet Extract and Color: One case of Hansen's Rennet Extract—To the cheesemaker securing the highest score on September White Cheese, Class I., Sec. 1.—W. S. Stocks, Britton.

One case of Hansen's Cheese Color—To the cheesemaker securing the highest score on October Colored Cheese, Class II., Sec. 2.—B. F. Howes, Attwood.

By C. H. Slawson & Co., Ingersoll, for D. H. Burrell & Co., Little Falls, N.Y., manufacturers of Chr. Hansen's Rennet Extract and Color: One case of Hansen's Cheese Color—To the cheesemaker securing the highest score on September Colored Cheese, Class I., Sec. 2.—John Francis, South Middleton.

One case of Hansen's Rennet Extract—To the cheesemaker securing the highest score on October White Cheese, Class II., Sec. 1.—W. S. Stocks, Britton.

Note.—All cheese competing for the special prizes offered by The R. M. Ballantyne, Limited, and C. H. Slawson & Co., must be made with Hansen's Extract and Color. No special cheese required.

By the J. B. Ford Co., Wyandotte, Mich., manufacturers of Dairymen's Cleaner and Cleanser: One Three-piece Carving Set, with Stag Horn Handles, Sterling Silver Mountings and Satin Lined Case—To the cheesemaker who is a regular user of Wyandotte Dairymen's Cleaner and Cleanser having the best finished and most stylish looking cheese on exhibition.—P. Callan, Woodstock.

One Three-piece Carving Set, with Stag Horn Handles, Sterling Silver Mountings and Satin Lined Case—To the buttermaker who is a regular user of Wyandotte Dairymen's Cleaner and Cleanser having the neatest and most attractive exhibit of butter.—J. H. Martin, St. Leon, Que.

Note.—All exhibits (except Stilton Cheese) are eligible for these two special prizes.

By the Canadian Salt Co., Windsor, Ont., E. G. Henderson, Mgr.: $15.00 in Cash—To the cheesemaker securing the highest score on cheese (except Stiltons) exhibited in any class.—D. Menzies, Molesworth, and R. A. Thompson, Attwood.

$10.00 in Cash—To the cheesemaker securing the second highest score on cheese (except Stiltons) exhibited in any class.—J. K. Brown, Ethel, and W. S. Stocks, Britton.

$15.00 in Cash—To the buttermaker securing the highest score on butter exhibited in any class.—T. O'Flynn, Tavistock.

$10.00 in Cash—To the buttermaker securing the second highest score on butter exhibited in any class.—J. H. Martin, St. Leon.

Note.—No special cheese or butter required.

By the Western Salt Co., Mooretown, Ont., N. A. Leach, Manager: One barrel Purity Cheese Salt—To the cheesemaker securing the highest score on September White Cheese, Class I., Sec. 1.—R. A. Thompson, Attwood, and J. K. Brown, Ethel.

One barrel Purity Cheese Salt—To the cheesemaker securing the highest score on October Colored Cheese, Class II., Sec. 2.—D. Menzies, Molesworth.

One barrel Purity Dairy Salt—To the buttermaker securing the highest score on fifty-six pound box Creamery Butter, Class III. and IV., Sec. 1.—J. H. Martin, St. Leon, Que.

One barrel Purity Dairy Salt—To the buttermaker securing the highest score on twenty-one-pound Creamery Prints, Class III., Sec. 2.—T. O'Flynn, Tavistock.

Note.—No special butter or cheese required.

By the Marshall Dairy Laboratory, Madison, Wis.—Robt. Johnson, Woodstock, Ont., Canadian Agent for Marshall's Rennet and Color: A handsome Gold Watch, value $25.00—To the cheesemaker securing the highest score on cheese (except Stiltons) made with Marshall's Rennet.—D. Menzies, Molesworth.

By the Imperial Bank of Canada: A Silver Cup—To become the property of the cheesemaker securing the highest total score, three times, or twice in succession, on two cheese; one cheese, either white or colored, exhibited in Class I., and one cheese, either white or colored, exhibited in Class II. In awarding this cup, the scores of the two cheese securing the highest score in Classes I. and II. (belonging to the same exhibitor) will be added. In case of a tie, settlement is to be left with the judges. Won in 1910 by J. E. Stedelbauer; won in 1911 by R. A. Thompson.—D. Menzies, Molesworth.

Note.—No special cheese required.

Cheese Buyer's Trophy: Challenge Cup, valued at $150.00—To become the property of the exhibitor of cheese (except Stiltons) at the Winter Dairy Exhibition who shall receive the highest score three times, or twice in succession.—D. Menzies, Molesworth.

Won 1903 by Frank Boyes; won 1904 by R. H. Green; won 1905 by O. Schwietzer; won 1906 by J. Patton; won 1907 by J. E. Stedelbauer; won 1908 by Mary Morrison; won 1909 by J. T. Donnelly; won 1910 by Mary Morrison; won 1911 by B. F. Howes.

Note.—Cheese without a bandage will be considered unfinished, and shall be scored off for finish accordingly.

Cheese on exhibition may be paraffined.

All one-pound print butter on exhibition must be wrapped in plain wrappers.

REPORT OF CHIEF DAIRY INSTRUCTOR AND SANITARY INSPECTOR FOR WESTERN ONTARIO, 1911.

Frank Herns, London.

It is with pleasure I present my Fifth Annual Report as Chief Dairy Instructor and Sanitary Inspector. The system of instruction was similar to previous years, except in so far as experience makes it necessary to follow certain changes and conditions that may occur from year to year. Six instructors were employed for cheese and two for creamery work. The usual April short course at the O. A. C. Guelph, was much appreciated by the instructors, all of whom attended.

Quality of Cheese.—The weather conditions for part of the season of 1911 will be remembered as very warm and dry. A portion of May cheese were considerably heated. July and part of August brought a few rough textured and acidy cheese. As usual some of the cheese at this time were too highly salted, but aside from these the quality was up to and in many cases better than the previous year. The fall cheese, other than a few lots of November and December, were of exceptionally good quality. The cheese were generally sold on a rising market, and considering the conditions under which many of the makers had to work for a couple of months the quality was very good. There is still some complaint with respect to the finish of the cheese, especially some of the "twins." On the whole, from our standpoint, we received less complaint regarding quality than last year.

Quantity of Cheese.—We made in Western Ontario in 1910, 33,617,847 lbs. (16,808 tons) of cheese, which is equal to 420,223 boxes of 80 lbs. each. This is 2,148,153 lbs. (1.075 tons) or 26,851 boxes less than in 1909. The returns for 1911 are not yet received, but a decrease in production for 1911 over any previous year is likely.

Average Yield and Price.—The average yield (lbs. of milk to make a lb. of cheese) in 1910 was 11.078 or .012 of a lb. less than in 1909.

The "average" in 1911 was slightly higher, as the milk tested lower than usual.

The net prices to patrons in 1910 was 10.68 cents per lb., cheese or .74 cents per lb. less than 1909. For 1911 the average price received is likely the highest in the history of the trade.

Average Temperature of Curing Rooms.—During July and August the average temperature of the curing rooms was 71 degrees. This is 1 degree higher than last year, and the highest temperature known in years was reached at times. (This temperature does not include cool-curing rooms.)

The Milk Supply.—13,004 patrons furnished milk to the cheese factories. This is 2,071 less than last year. The estimated average per cent. of fat in the milk for the season was 3.44 per cent., or .06 per cent. less than in 1910. May 3, 25 per cent.; June 3, 3 per cent.; July 3, 3 per cent; August 3, 5 per cent.; September 3, 55 per cent.; October 3, 8 per cent. For some reason the average test of the milk during the first three months was lower than any previous year. During July and August the milk arrived at the factory in some cases over-ripe and gassy. The weather was extremely warm, and, no doubt, it was difficult to properly care for the milk, but the great improvement required is better facilities on the average farm for cooling the milk. Although in many cases considerable improvement was noticed yet we cannot report a very general improvement in the quality of the milk during the two warm months. Each year, however, we hear of fewer difficulties with "yeasty bitter milk." At some factories the supply rapidly decreased owing to the dry weather, and when this occurred, makers, as well as patrons, have reason to be disappointed. The patrons are partially reimbursed by the high prices, but the makers in many cases have to stand a loss from a temporary decrease in production.

Loss in Whey.—The estimated average loss of fat in the whey for the season was .216 per cent. This is slightly greater than last year. May, .2 per cent; June, .2 per cent.; July, .22 per cent.; August, .23 per cent.; September, .2 per cent.; October, .24 per cent.

General Work.

Factory Visits.—194 factories were visited by the Cheese Instructors. Seven of these made both butter and cheese, and 7 butter only this year. These factories received 514 full day visits and 535 call visits. A total of 1,049 visits.

Casein Making and Cream Shipping.—Twelve factories made casein and shipped cream.

Whey Butter.—Five factories made whey butter.

Patrons Visited.—564 patrons were visited, considerably more than last year. 1,829 new milk cans were bought by the patrons. Sixteen factories have ice cool curing rooms, and five have sufficient insulation to control the temperature.

Thirty-two factories paid for milk according to the test. This is five more than last year.

Ninety-two factories pasteurized the whey, which is a slightly greater proportion than last year.

One hundred and fifty-seven factories are reported as kept clean and in sanitary condition. This is gratifying, and it is to be hoped that at no distant date all factories can be pointed out as first class in this condition. $30.814 have been expended on general improvements.

In order not to take up the time of the Convention with too many details, a table has been made out giving the figures in connection with the instruction work as carried on in each group during the past season.

INSTRUCTION WORK, 1911—(CHEESE).

Instructor and Group.	Factories Visited.	Combined Cheese and Butter.	Butter only.	Casein.	Number of Patrons.	Number of Full Visits.	Number of Call Visits.	Number of Patrons Visited.	Number of Curd Tests.	Number of Samples Tainted.	Number of Lactometer Tests.	Number of Babcock Tests for Adulteration.	Number of Samples Deteriorated.	Number of New Cans Bought.	Factories Making "Whey Butter."	Factories Paying by Test.	Factories Having Cool Curing Room.	Factories Pasteurizing Whey.	Whey Fed at Factory.	Average per cent. Fat in Milk for Season.	Average per cent. Fat Lost in Whey.	Number of Factories Kept in Sanitary Condition.	Estimated Expenditure for General Improvements.
LISTOWEL— J. R. Burgess	34	1	....	....	2,674	92	87	63	12	3	6,818	136	11	350	....	5	4	20	4	3.45	.19	33	$1,315
STRATFORD— G. M. McKenzie	33	1	....	1	2,500	98	63	50	18	16	5,813	261	10	348	....	12	8	22	5	3.4	.24	27	6,018
INGERSOLL and WOODSTOCK— A. E. Gracey.....	34	....	....	3	1,862	81	110	54	44	22	3,745	571	49	319	2	3	2	22	....	3.39	.22	28	7,521
SIMCOE— George Travis	28	....	1	....	2,024	68	113	111	50	14	4,431	580	7	233	3	2	1	6	1	3.5	.22	23	3,140
BRANTFORD— R. H. Green.....	28	....	6	3	1,686	94	64	165	99	70	4,124	301	35	221	....	3	1	11	....	3.4	.22	19	4,630
LONDON— Fred Boyes	34	5	1	5	2,078	81	95	121	44	41	3,844	410	5	358	....	7	....	11	1	3.5	.21	27	8,190
OUTSIDE FACTORIES...	3	....	....	....	180	....	3	....	....	....	.....	.....	....	.....	....	....	....	....	....	....	....	.....	.....
Total	194	7	8	12	*13,004	514	535	564	267	166	28,775	2,259	117	1,829	5	32	†16	92	11	3.44	.216	157	30,814

* Butter patrons not included.

† Five additional factories have room insulated, making a total of 21

Pasteurization of Whey and Whey Tanks.—Fifty-six per cent. of the factories pasteurized whey in 1911. At the meeting of Dominion Dairy Experts, held at Ottawa on December 6th, a resolution was unanimously passed approving of and strongly recommending the pasteurization of whey, both from the standpoint of factory improvement and as a means of preventing the spread of disease through the whey to the stock on the farm.

An improvement can be noticed each year in the method of handling the whey and whey tanks. The latter in the majority of cases are cleaned oftener, and more effort is made to return the whey in better condition.

Sewage Disposal.—The majority of septic tanks that have been installed during the past two years are giving good satisfaction. These tanks are strongly recommended as a means of disposing of factory waste water and surplus whey, thus assisting in getting the best results from pasteurization.

Annual and District Meetings.—Since November 1st, 1910, to October 31st, 1911, district and annual meeting of cheese factories and creameries to the number of 106 were held. Total attendance, 6,210. Through these meetings we have been able to reach a large number of milk producers.

Memorandum of Prosecutions, 1911.—A special officer was again employed his year to deal with cases of adulteration of milk. Twenty patrons only were prosecuted. Each appeared before a magistrate, acknowledged the offence, and paid fines from $5 to $50. Half of this money went to the different factories where the offence was committed, to partially reimburse the patrons. The other half of the fines went to the Association, to help pay the expenses of this work to which the Association is in debt $59.70. This is the smallest number of cases of deterioration of milk found since this work began. It is to be hoped that in future little of this kind of fraud will be found, but until factories adopt payment by test we see no other method of handling this work.

District Meetings, 1910.—The Central district meeting was held at the Dairy School during the Winter Fair, was well attended, and a live interest taken in the subjects brought up for discussion. A full report of the meeting will, no doubt, be published, so that it will be available for everyone interested.

I wish to express sincere appreciation of the work of the Dairy Instructors during the past season and thank the Directors of the Dairymen's Association, the makers, buyers, and all the dairymen for their kindness to me.

In connection with the factories paying by test, I believe the sentiment in favor of paying by test is growing, not only among the patrons of the factories, but among the makers. They are becoming more of the opinion that some system of paying by test would be an advantage, provided the system is made general, and that the milk is tested by some officially appointed person who would have the confidence of both the makers and patrons. It has been suggested that a plebiscite should be taken during the coming summer of the patrons of all the factories of Western Ontario, and that we should get the opinion of every patron of every factory as to whether they were in favor of paying for the milk by the test. If it is found that a large majority of the patrons are in favor of that particular line of work, then would it not be possible to present this in the form of a petition to the Government, asking that official testers be appointed to do the work, and that a system should be worked out whereby every factory could pay by test and have the testing done by a disinterested man. That has been suggested, and I mention it here in order to know what you think of it.

Experiments with over-ripe and Gassy Milk compared with Normal Milk.

Owing partly to the extreme warm weather of July and August, the "average" at some of the factories was higher than usual. A portion of the milk arrived at the factories over-ripe and gassy. It has been previously well established that losses in yield occur in handling such milk. The suggestion was made that the instructors do some further work on this point under factory conditions. Four experiments were made, the average results of three of which are given. The milk was taken in the first day and made into cheese the usual way. The patrons whose milk went into this particular vat were visited that afternoon by the Inspectors and requested to make a special effort to cool the milk and have it sweet and in good condition for the following day. The cooled milk from the same patrons was made into cheese the second day, and the summary is as follows:

Gains from Cooled Milk—Summary of Three Experiments made in July and August, 1911.

	Milk.			Fat.		Cheese.			
Kind.	Lbs.	Temp. recorded.	% Acidity.	%	% loss in whey.	Lbs.	Aver-age.	100 lbs. milk made	Lbs. to 1 lb. fat.
Not cooled.	14,294	80	.185	3.38	.23	1,198	11.93	8.37	2.48
Cooled.....	12,887	68	.166	3.33	.183	1,105	11.66	8.57	2.6
Difference .	1,407	12	.019	.05	.047	93	.27	.2	.12

1. In every case the cooled milk made a greater quantity and a better quality of cheese than the uncooled milk delivered by the same patrons the previous day.

2. The cooled milk arrived at the factory with less acidity, was not gassy, and there was less loss of fat in the whey.

3. The greater yield of cheese from the cooled milk increased the value about 3 cents per 100 lbs. milk.

Resolution respecting the Cooling of Milk for Cheese Factories.

At the Annual District Meeting of Cheese Makers and Dairymen, held in the lecture room of the Dairy School, Ontario Agricultural College, December 13th, 1911. it was brought out in discussion that a considerable portion of the milk delivered to cheese factories during warm weather is over-ripe, caused by insufficient cooling immediately after milking. It has been well established that such milk will not make the greatest possible quantity nor the finest quality of cheese. In view of these facts the following resolution was passed, and it was recommended by the meeting that this resolution be read at the coming annual meetings of cheese factories, and an effort be made to have a similar resolution passed by the patrons to take effect this coming summer, in order that during the hot months of the season the milk may arrive at the factory in better condition:

"That whereas in the opinion of this meeting some definite temperature should be established for the delivery of milk sent to cheese factories: Be it resolved, that the night's milk for daily delivery be cooled immediately after milking to a

temperature of 65 degrees or under, and that the temperature of this milk should not be higher than 70 degrees when delivered at the factory. If for any reason it is found necessary to mix the night's and morning's milk, the night's milk under these conditions should be cooled to a temperature of 60 degrees Fahr. or under, immediately after milking, and milk so mixed should be delivered at the factory at a temperature not higher than 75 degrees F. To keep milk over Sunday for Monday morning's delivery it is recommended that the milk be cooled immediately after milking to a temperature of 60 degrees or under, and held at this temperature until delivered at the factory."

The next point I wish to take up is some work which we did the past season with reference to the salting of curds. Those of us who were present last evening heard Mr. Publow say that in his investigations in England and Scotland last summer one of the defects which he believed was injuring our cheese was that some of it was too highly salted during the hot months. Now I wish to be very clear on this point, because I realize it is a somewhat difficult subject, and I would not like to have you get the impresssion that I said you were to salt the curds with exactly such and such amounts of salt. I merely give you the results of one experiment that was conducted as carefully as Instructor Gracey, who had charge of the work that was conducted as carefully as Instructor Gracey, who had charge of the work, could do it under factory conditions. It is a beginning for further experiments along the same line. Similar experiments were made at the Dairy School at Guelph, and the results were much the same. What we have to say about salting curds refers only to the two warm months of the year (July and August), as these are about the only months in which we have trouble with rough textured cheese.

Experimental Work.

Salting Curds with different amounts of Salt.

Buyers frequently call attention to the fact that some makers are inclined to apply more salt to the curds than is necessary, during the warm weather. When the curing-rooms are very warm, makers can hardly be blamed for salting sufficiently to keep the cheese close, but this may be overdone. At the district meeting last year, during a discussion of this subject, it was suggested that experiments be made on this point at the Dairy School and under factory conditions. The cheese made at the factory are here to be examined by those who wish to do so.

On July 29th one vat containing 7,338 lbs. of milk was taken for the experiment. This made 876 lbs. of curd, which was evenly divided into four lots of 219 lbs. each. These lots of curd were salted respectively: (2) (2¼) (2½) and (2¾) lbs. of salt per one thousand lbs. of milk. Each lot of curd was again divided at the time of going to press, making two cheese each—in all, eight cheese. Four of these cheese, representing different amounts of salt, were taken direct from the press the following day to the cool-curing room, and held at an average temperature of about 60 degrees. The other four were left in the factory curing-room for fifteen days at an average temperature of about 80 degrees, and then taken to the same cool-curing room, where both lots have since been kept. These cheese were weighed when taken from the press, and again in fifteen days, and the shrinkage under both methods of curing calculated. They were scored by experts on August 18th, and on October 4th, and the average of these scores taken. Samples for moisture and fat were taken at different times. Briefly the results are as follows:

TABLE No. 1.

Marks on cheese.	Rate of salting.	Salt used.	Curd.	Weight green cheese.	Loss in pressing.	Milk to make 1 lb. green cheese.
	lbs.	lbs. oz.	lbs.	lbs.	lbs.	lbs
A–1				83.		
	2	3 10	219		55.5	11.22
A–2				80.5		
				163.5		
B–1				81.5		
	2¼	4 2	219		56.5	11.28
B–2				81.		
				162.5		
C–1				81.75		
	2½	4 9	219		56.	11.25
C–2				81.25		
				163.		
D–1				81.		
	2¾	5 1	219		57.75	11.37
D–2				80.25		
				161.25		
Total, 8.		17 6	876	650.25	225.75	Av. 11.28

TABLE No. 2.

Put in cool curing room at once.			Salted per 1,000 Lbs. of milk.	Left in ordinary curing room 15 days, then put in cool room.		
Marks on cheese.	Lbs. Shrinkage.	Average score.		Marks on cheese.	Lbs. Shrinkage.	Average score.
A–1	1	95	2.	A–2	1.5	92
B–1	1	94.25	2.25	B–2	1.75	92.5
C–1	.75	94.5	2.5	C–2	1.5	92.25
D–1	1	92.75	2.75	D–2	1.5	91

NOTE.—Per cent. fat in milk..... 3.6.
" acidity at setting..... .18.
" " dipping ..... .17.
" " milling..... .75.
" " salting ..... 1.05.
" loss fat in whey ..... .24.
Lbs. culture used.....35 (pasteurized).
Amount rennet, 3¼ oz. per 1,000 lbs. milk.
Time from dipping to milling, 2 hrs. 30 min.
Time in whey, 2 hrs. and 45 min.

Summary.

1. The cheese salted 2 lbs. per 1,000 lbs of milk, and held in the ordinary curing-room for 15 days, went decidedly off in flavor, while the duplicate cheese placed at once in the cool-curing room retained its flavor about as well as those salted higher.

2. The cheese salted 2¾ lbs. was in no case better in flavor, while the texture was crumbly and inferior to those salted 2¼ and 2½ lbs.

3. The score of the cheese indicates that 2¼ lbs. was about as effective as 2½ lbs. and superior to 2¾ lbs.

4. The cheese salted 2 lbs. scored slightly higher, but this was only true of the one put into the cool-curing room at once.

5. There was a slightly greater loss in pressing, and it took slightly more lbs. of milk to make a lb. of cheese from the curd salted 2¾ lbs.

6. There was a decidedly greater shrinkage in weight of cheese held in the factory curing-room for fifteen days, compared with those placed in the cool-curing room for the same length of time.

7. The per cent. of moisture was slightly less in the high salted cheese, while the percentage of fat was slightly higher.

8. There was a decided difference in the quality in favor of the cheese (especially flavor and texture) placed in the cool-curing room at once, compared with the duplicate cheese held in the factory curing-room for fifteen days.

9. This work indicates that it is not advisable to oversalt curds during warm weather. It is well, however, to point out that it is possible to go too far the other way, and under-salt the curds, especially when the cheese have to be placed in curing rooms the temperature of which goes far too high and over which the maker has no control. Good judgment must be exercised at all times on this point.

Instructor A. E. Gracey made the experiment, and I have to thank him for the pains taken by him, and for the accuracy of the work.

COW TESTING.

Mr. C. F. Whitely then gave an interesting address upon Cow Testing, which will be found in the report of the Eastern Dairymen's Association.

MILK CASEIN AND ITS RELATION TO THE MANUFACTURE OF CHEESE.

Professor H. H. Dean, O. A. C., Guelph.

We purpose dealing with this subject under three questions: What? Why? How?

What?

What is Casein? It is the chief nitrogenous compound found in milk, and consists chemically of the elements carbon, hydrogen, oxygen and nitrogen. It is distinguished from milk fat in that it contains the element nitrogen, the most valuable of all elements for plant, animal, or human food. It is the most expensive

fertilizer which the farmer needs to purchase; it is the most expensive ingredient which the housekeeper buys in food. The white of an egg, the lean portion of meat, the curd of cheese, are common examples of foods containing the element nitrogen. It alone builds muscle in the animal or human body. Plants deprived of nitrogen wither and die.

Casein is secreted in milk by the cow by means of a special cell activity, but its primary source is the nitrogenous material in the food fed to a cow, which is transformed into blood, and from the blood it passes into the milk through the action of cells. The foods fed to a cow containing nitrogen are the most expensive to purchase, such as clover hay, peas, gluten meal, bran, oil-cake, and cotton-seed meal. Without a fair proportion of foods fairly rich in nitrogenous matter, it is impossible for the cow to produce milk economically.

What is the Relative Value of Milk Casein as Compared with Milk Fat?—Authorities differ somewhat as to the relative values of casein and fat in milk. It has been customary to estimate the value of casein as sold in skim-milk. For instance, if skim-milk contains three per cent. casein and the skim-milk sells for 20c. to 25c. per 100 lbs., then casein is rated at six to eight cents per pound. In the same way it has been argued that if whole milk contain four per cent. fat, and sells for $1.00 to $1.50 per 100 lbs., then fat is worth 20 to 30 cents per pound to the farmer. Against this argument it may be pointed out that skim-milk has never been properly valued as a human food in America, because of sentimental reasons; and further, by this method of valuation, we are disassociating two food compounds which were, and are, intended by nature to be associated together for the best results. It is a case similar to that of two members of a firm, one of whom is strong in essential points where the other is weak. Associated they make a strong team: disassociated they are weak. Up to the present Mr. Fat has been considered the strong member in the firm of Fat, Casein, Milk & Co. Mr. Casein has been more modest in his aspirations, and only recently has he been coming to the front in the world of Dairy Economics. It is not always the man who does the most shouting, or who is the subject of "Special Dispatches" to the newspapers, who is doing the real work of the country. In most cases such men can be discounted 25 to 50 per cent., and then they are likely to be rated above real value. We are quite safe in discounting the usual claims of milk-fat for cheesemaking by 25 to 50 per cent.

Why?

Why consider casein when discussing the relative values of milks for the manufacture of cheddar cheese? Simply for the reason that without casein it is impossible to make cheddar cheese. Further, casein is quite as valuable pound for pound as is milk-fat for the making of cheese, and also because this compound varies considerably in milk from different cows and from the same cow under various conditions, more particularly with advancing lactation, when the percentage of casein may increase one per cent. or more, as compared with the percentage of casein in the same cow's milk early in the stage of lactation. As the result of over 8,000 tests of casein in the milk as delivered to ten cheese factories in Ontario during the season of 1911, we found the percentage of casein in single tests of milk varying from 1.6 to 2.9. The average percentage of casein and fat for the six factories in Western Ontario were respectively 2.26 and 3.42; for Eastern Ontario (four factories), 2.1 and 3.5. These tests indicate a slightly higher percentage of casein and lower percentage of fat in Western Ontario cheese factory milks, as compared with the tests in Eastern Ontario.

One hundred vat tests at the Ontario Agricultural College in 1911, showed a variation in the percentage of casein from 1.8 to 2.9. In single O. A. C. patrons' milk the lowest percentage of casein was 1.8 and the highest 3.2, for 1911.

During the years 1908 to 1911 inclusive, the milk was tested for fat and casein from each of nine cows, representing three breeds, three cows of each breed (Ayrshire, Holstein and Jersey). We obtained results as follows:

Breed.	Lbs. milk.	Lbs. Casein.	Lbs. Milk-Fat.	Lbs. Fat and Casein.	Aver. per cent.	
					Casein.	Fat.
Ayrshires	77,734	2,023.30	3,115.36	5,138.66	2.60	4.01
Holsteins	88,355	1,996.15	2,994.23	4,990.38	2.26	3.39
Jerseys	56,685	1,530.15	2,716.95	4,247.10	2.69	4.79

Nearly all are agreed that fat and casein are the two compounds in milk which determine its value for cheesemaking, and that paying patrons of cheeseries by the weight of milk delivered is an unjust method. If more evidence were needed we have it in the results of the tests of these cows belonging to three breeds of dairy cattle.

Reducing the figures to a basis of 1,000 lbs. milk we get the following:

Breed.	Lbs. per 1,000 lbs. Milk.		
	Casein.	Fat.	Fat and Casein.
Ayrshire	26	40.1	66.1
Holstein	22.6	33.9	56.5
Jerseys	26.9	47.9	74.8

As a result of tests in which milks of varying percentages of fat and casein were made into cheese, we find there is a fairly constant relation between the fat and casein in the milk and the yield of cheese. Owing to the varying conditions, such as loss of fat and casein in the whey, varying percentages of salt and moisture in the cheese, and losses due to evaporation and chemical changes during cheese ripening, it is not to be wondered at that the relation is not a constant one between fat and casein in the milk and cheese made. However, we believe the principle is right, and that "fat-casein" is a fair measure of the cheese value of milks as delivered to cheeseries in the Province of Ontario. So far as our work has gone it indicates that the yield of cheese per pound of fat and casein is not far from 1.6 lbs. In extreme cases this number will not be correct, but it is probably true for average milk and for average conditions.

Summing up the Why Test Milk for Casein? we should say: Because casein is essential for cheese-making; it is equal to, or more valuable for cheese, and as a food, than is milk-fat; it varies in milk, though not so widely as the fat; the casein, together with milk-fat, makes a reasonable and just basis for a method of dividing money among patrons of cheeseries throughout the Province. In the meantime, "per cent. fat plus 2" is near enough for all practical purposes, as a method for dividing proceeds of sales of cheese among patrons.

How?

How shall we determine the percentage of casein in milk? For this purpose we believe the Hart casein test meets all reasonable demands for a short method of determining casein in milk. The principal points in making this test are:

1. Add 2cc. of chloroform to each bottle; then add 20cc. of a .25 per cent. solution of acetic acid at a temperature of 70° F.

2. Add 5cc. of milk at a temperature of 70° F. to the bottle containing the chloroform and acetic acid.

3. Invert the bottle, after corking or placing thumb over the mouth of the bottle, and shake for 15 or 20 seconds to enable the chloroform to dissolve the fat, and the acetic acid to precipitate the casein.

4. Apply centrifugal force by placing the bottle or bottles in a 15-inch diameter centrifuge, and whirl for 7½ to 8 minutes at a speed of 2,000 revolutions per minute. (Use a metronome to obtain correct speed).

5. After whirling, remove the bottles from the centrifuge, and place in an upright position in a rack for ten minutes; then read.

6. Reading is made in percentage, and reading as close as one-tenth of one per cent. can be made. The bottles are graduated similarly to those of the Babcock test for milk-fat.

7. After reading, empty and wash bottles, when they are ready for use again.

A six-bottle Hart casein tester costs $30, and a twelve-bottle machine costs $40. The centrifuge may be run by hand or with a small electric motor.

This test is fully described in Bulletin 156 by the Wisconsin Experiment Station, Madison, Wis., U.S.A., published in November, 1907.

Objections which have been Raised to Casein Test.

1. That duplicate tests do not agree, and that two persons working on the same sample of milk will obtain widely different results.

Answer.—This is not correct, as the following results got by three different persons working independently on the same sample and with two different machines show: 2, 1.9, 2 and 2.1. Two of the men obtained duplicates exactly alike, one had a variation of .1, while the extremes are 1.9 and 2.1, or a difference of .2. All these are within the limits of error and are as near agreeing as we may expect under average conditions.

2. That the acidity of milk causes an error in readings, and that a sample tested day after day will give different results each day.

Answer.—At the O. A. C. on December 9th, 1911, a fresh sample of milk tested 2 per cent. casein. On December 11th, when the acidity was .15 per cent. the sample tested 1.9 per cent. casein. December 12th, when the sample had developed .55 per cent acid, the sample tested 2.4 per cent. We see that no serious error was caused until partial coagulation of the casein in the sample had taken place.

3. A variation in the temperature of the milk will cause a serious error, and cheese and factory men, or others testing, cannot keep samples of milk at the temperature required.

Answer.—The following are results got at the O. A. C. on December 15th, 1911:

Temperature of Milk.	Casein.
	%
60° F	2.85
62°	2.7
64°	2.7
66°	2.55
68°	2.55
70°	2.55
72°	2.55
74°	2.40
76°	2.30
78°	2.30
80°	2.10

These results show no marked variation in the percentage of casein in a range of 62° to 74°, which is 8° below and 4° above standard temperature.

4. A variation in the temperature of acetic acid will cause an error in results.

Answer.—On December 13th, 1911, the following results were got at the O. A. C. by Mr. Cherry, an undergraduate in dairying:

—	Temp. of Acid.	Temp. of Milk.	% Casein.
1	70°	70°	2.2
2	72°	72°	2.1
3	74°	74°	2.0
4	70°	74°	2.0
5	70°	76°	2.4
6	70°	78°	2.1
7	70°	64°	2.15
8	70°	66°	2.1
9	70°	68°	2.1

All these results, with the possible exception of No. 5, are quite satisfactory.

5. A slight variation in the speed of the centrifuge will cause a very serious error in results.

Answer.—The centrifuge which we use at the O. A. C. runs at 2,000 revolutions per minute when the metronome is set at 56. This figures at 35.71 revolutions of the centrifuge for each tick of the metronome. A sample gave a reading of 2 per cent. casein with the metronome at 56 and the same sample read 1.9 at 54, which is a mathematical speed of about 1,928 revolutions per minute. Another sample read 1.9 per cent. casein at 56 and 2 per cent. at a speed of 50, which is a mathematical speed of 1,785. While it is important that proper speed should be maintained, these results indicate that a reduction of 215 revolutions per minute caused no material change in the reading of a sample, and are within the limits of error.

6. Composite samples cannot be tested satisfactorily with the casein test and this makes it impracticable at cheese factories.

Answer.—This is the most serious objection raised. While we have been able to get quite satisfactory results at the O. A. C. testing composite samples preserved with bichromate of potash for three to six days, the results were not satisfactory in tests made at cheeseries during the season of 1911. In some cases the tests were comparable with the results got by daily testing, but in a number of cases there was a wide difference. With care, composite samples for three days can be tested quite satisfactorily, using potassium bichromate in small quantity as a preservative,

and if each patron's milk were tested in this way once a month, it would probably be near enough for all practical purposes. Dr. Hart advises keeping composite samples in brown colored bottles, away from the light.

"The temperature of 70 degrees F. was set for the test because it is the common room temperature. That, of course, is the greatest source of error, and must be rigidly adhered to if accurate results are to be obtained. The principle of the temperature action is analogous to the action of heat on the curd in the vat. Raising the temperature tends to shrink the curd, or give you a low reading, while a low temperature prevents a more complete expulsion of moisture, consequently the reading is high.

"I am fully aware that there are difficulties in the test under practical conditions, the greatest one being the failure to control the temperature, but when this is done then accurate results can be obtained. We have run hundreds of determinations, checking them with the chemical method, and I am absolutely confident that when run properly the results are reliable. It is also possible to teach the common cheese operator how to run this test accurately. So far as the composites are concerned, they, too, are reliable, if care is taken to preserve the samples in brown bottles kept away from the light and with the amount of preservative as indicated in our circular No. 10. The tablets for this work are on the market. The composite should not extend over more than one week.

"I have in other places emphasized the fact that sour milks cannot be run, but no one should be receiving curdled milk at a cheese factory.

"With best wishes and kindest regards, I am, very respectfully,

E. B. Hart."

In the foregoing I have by no means exhausted the What? Why? and How of the subject, but enough has been said to cause a discussion, and we hope, also, to cause those interested to give serious thought to these questions which are very important to the welfare of the cheese industry of Canada.

CREAMERY REPORT, 1911.

Frank Herns, Chief Dairy Instructor, London.

The increase that has been made in butter during the past few years is remarkable. In 1910 we increased nearly two million pounds over 1909, and in 1911 we made another increase of nearly two million pounds over 1910, and the market has absorbed all that, as well as the large quantity that was made in Quebec, and at prices which I believe have been profitable.

The two Creamery Instructors visited 97 creameries, of which 7 were combined creameries and cheese factories. This is 5 more than last year. Eight of these were taken over by the Cheese Instructors who visited them regularly, the Creamery Instructors calling occasionally.

Quality of Butter.—When we consider the increase in the output of butter from Western Ontario, it is to be expected that some defects will occur in portions of this butter. Practically all the butter is made from collected cream, much of which is hauled long distances, and collected only two or three times per week. Bearing in mind these conditions we believe there is a steady improvement in the quality from year to year. A defect frequently brought to our attention is the lack of uniformity in the salt. Little complaint was heard regarding mould and mottles.

QUANTITY OF BUTTER.—We produced at the Creameries in the past season 11,310,000 lbs. of butter. This is an increase over 1910 of 1,758,000 lbs. A quantity of cream was used for other purposes as well as many thousand pounds of dairy butter made, of which we can secure no record.

QUALITY OF CREAM.—22,371 patrons sent milk and cream to the Creameries, this is 4,328 more than in 1910, and partly accounts for the increase in the quantity of butter made. The quality of cream is slowly improving. If some practical system of grading cream could be worked out to meet the conditions under which creamery men have to work, no doubt, it would tend to more rapidly improve the quality. The average per cent. of fat in the cream for the season was 27 per cent., an increase of 1 per cent. over the average of 1910. Supplying cream testing not less than 30 per cent of fat is an advantage to the Creamery and to the patrons.

VISITING CREAMERY PATRONS.—Owing to the large territory which the Creamery Instructors have to cover, they were able to visit very few patrons. This work is so important in the scheme of Creamery improvement that we again wish to point out the need of a third Creamery Instructor who could devote his entire time to visiting the farms and giving instruction in the handling of Separators and the Care of Cream.

CREAMERY VISITS.—245 full day visits and 66 call visits were made to the Creameries by the Instructors.

HOW CREAM IS TESTED.—27 creameries use the scales for weighing samples for testing. Six Creameries only use the Oil Test, the balance of 64 Creameries use the pipette.

PASTEURIZATION.—11 Creameries pasteurize the cream, 3 less than 1910.

MOISTURE.—14.46 per cent. is the average per cent. of moisture in the butter, obtained from 442 tests. A proportion of these tests were made at each Creamery. Forty-one samples showed over 16 per cent. of moisture, 8 less than 1910. These were taken from 31 creameries, 3 more than 1910.

SALT.—275 tests were made for salt by the use of the Silver Nitrate Test. The Instructors have carried this test for two seasons, and after looking carefully over the data they have obtained we are inclined to believe that this test will show for all practical purposes, accurate enough results to determine the percentage of salt retained in the butter. The question of uniform salting of butter is so important, in view of the frequent complaints received regarding this point that we would urge the butter makers to take precautions in the way of careful calculation of the amount of butter in the churn, the exact weight of the salt, and the quantity of water left in the churn each day during the working. The amount and kind of preservative seems to slightly affect the results of the test. There is some difficulty in obtaining and keeping the silver nitrate solution of a standard strength, so that we are not yet prepared to say this test should be placed in the hands of all makers, but we believe the time is coming when a salt test of some kind will be necessary.

STORAGES.—46.5 degrees was the average temperature of the Creamery storages. This is far too high, and every effort should be made to keep the storages at as low a temperature as possible, as the fine flavor of butter rapidly deteriorates if held even for a few days at too high a temperature.

SANITATION.—60 Creameries are reported being kept in first class sanitary condition. Twenty-six Creameries kept in fair sanitary condition. Five Creameries in very poor sanitary condition.

HOW CREAM IS COLLECTED.—23 Creameries used the large cans for collecting cream; 18 Creameries used jacketted cans for collecting cream; 31 Creameries used

individual cans for collecting cream; 1 Creamery used small cans for collecting cream; 16 only used the cream tanks for collecting cream.

Using Culture and Cooler.—10 Creameries are using a culture and 26 Creameries using a cooler.

Expenditure.—$16,183.00 was spent in building the 6 new creameries, and $13,496.00 was spent in general improvements, making a total of $29,679.00.

District Meeting.—The annual District Creamery Meeting was held at Guelph at the time of the Winter Fair, and was well attended. Many topics of interest were discussed. The report of this meeting will, no doubt, be published in the near future, and a copy sent to each Creamery man.

The Instructors have done everything in their power to improve the quality of the butter and the condition of the Creameries. I wish to thank them, and also the Creamery men, for their hearty co-operation in the work of advancement.

INSPECTION.

The following is a summary statement of work done by the two inspectors.

	D. McMillan.	F. Dean.	Total.
Creameries visited	40	57	97
No. of patrons sending cream	10,780	11,591	22,371
Tons of butter made 1911	2,378	3,277	5,655
Tons gain	244	635	879
Pounds of butter made 1911	4,756,000	6,554,000	11,310,000
Pounds gain	488,000	1,270,000	1,758,000
Full day visits	112	133	245
Call visits	17	49	66
Patrons visited	.....	37	37
Average per cent. of fat in cream	26	28	27
No. of tests made for moisture	241	201	442
Average per cent. moisture	14.39	14.53	14.46
Samples showing over 16 per cent. moisture	24	17	41
No. of creameries these samples were taken from	14	17	31
No. of tests made for salt in butter	114	161	275
Average per cent. salt used	5.34	5.5	5.42
Average per cent. salt left in butter	3.91	2.9	3.41
No. of creameries, cream collecting	37	45	82
No. of creameries, cream collecting and separator	2	7	9
No. of creameries, separator	1	2	3
No. of creameries using Babcock test	35	50	85
No. of creameries using oil test	5	1	6
No. of creameries using box churn	1	1	2
No. of creameries using combined churn	39	56	95
No. of creameries using scales for weighing samples	16	11	27
No. of creameries using large cans C.C.	11	12	23
No. of creameries using jacketted cans C.C	9	9	18
No. of creameries using individual cans C.C	4	27	31
No. of creameries using small cans C.C	.....	1	1
No. of creameries using cream tanks C.C	13	3	16
Average temperature of storage	47	46	46.5
No. of creameries having good water supply	35	33	68
No. of creameries having fair water supply	2	15	17
No. of creameries having poor water supply	3	2	5
No. of creameries having good drainage	26	36	62
No. of creameries having fair drainage	7	14	21
No. of creameries having poor drainage	7	1	8
No. of creameries using culture	3	7	10
No. of creameries using coolers	12	14	26
No. of creameries using pasteurizers	4	7	11
No. of creameries kept in good sanitary condition	32	28	60
No. of creameries kept in fair sanitary condition	6	20	26
No. of creameries kept in poor sanitary condition	2	3	5
Expenditure { New creameries	$3,383 00	$12,800 00	$16,183 00
Expenditure { General improvement	$5,861 00	$7,635 00	$13,496 00
Totals	.....	.....	$29,679 00

NOTE.—6 not given.

WHAT IS MILK?

Professor Robert Harcourt, O. A. C., Guelph.

Starting with the fact we are most familiar with, we may say that milk is a food. It occupies an almost unique position among animal foods, for it contains in itself representatives of all three nutritive constituents, namely, protein, carbohydrates and fat. It is palatable, easily digested, and highly nutritious. It is not only the natural food of infants, but a most important food for children and adults. It is also an indispensable food in many, if not most, cases of disease where nutrition is impaired. Yet, while all this can be truthfully said about milk, it is not an expensive food when compared with meats, or other forms of animal food. Too often it is regarded as a luxury to be used only as a condiment with tea, coffee, fruit, and as an adjunct in cooking, when, as a matter of fact, a given amount of money spent on milk at eight, or even ten, cents a quart will furnish more flesh forming materials and will produce more energy in the body than if expended on meats, eggs, etc.

Naturally, milk is not as cheap as the cereals or vegetable foods in general, for these contain a large amount of carbohydrates which are our cheapest energy producers. Moreover, bread and milk, or oatmeal and milk, form about as complete a food as can well be devised. Consequently, when we put these two foods together we not only have a palatable, nutritious diet, but an inexpensive one.

My next point is one that need not be dwelt on at any great length, namely, milk readily takes up odors, good or bad. Milk has a mild but decided odor of its own and is not improved by absorbing that of other materials.

Milk is also a particularly fine medium for the growth of bacteria, and coupled with this is the fact that it is peculiarly liable to contamination. Consequently, it is evident that the greatest care should be exercised to exclude all forms of dust and dirt, and that the temperature of the milk be lowered as quickly as is possible. Suitable temperature and a moist condition are two essentials for rapid development of bacterial life. These are naturally supplied in fresh drawn milk and, as there is an abundance of suitable food, the organisms getting into the milk rapidly multiply. These organisms may be acid forming and objectionable, though decidedly useful in cheese and butter making, or they may be the living germs of some of our most dreaded diseases.

But most of us are quite familiar with these points, so let us look at what milk is from the standpoint of composition. Very naturally we expect to find variations in composition in the milk from different cows, but all milk contains water, protein, fat, sugar, and an incombustible ash material. Let us now look more closely at each of these constituents.

Water forms by far the largest proportion of the milk and serves to hold some of the constituents in solution and some in suspension. It is because the milk solids are either in solution or in a finely divided suspended condition that milk is in the liquid form. A turnip contains much more water and is a solid, bulky substance. Milk must be classed as a dilute and bulky food, but possibly we sometimes undervalue it because it is a liquid and think of it more as a beverage.

Our present knowledge of the protein of milk is far from complete, though much work has been done on the subject. This is due to the fact that it is extremely difficult to obtain these compounds in anything like a pure state, and also to the ease with which they change when an effort is made to separate them from the milk. Authorities do not even agree as to the number of these bodies,

and they have been variously stated at from one to eight by different observers. The most recent work has tended to reduce the number to four, and for all practical purposes we may consider only two. These are casein and albumen.

Casein is now thought to be an albuminoid body in combination with lime salts, or more correctly, calcium phosphate, and in this state it is in solution, or at least, in semi-solution. In the presence of an acid, either added or developed in it, the union with the lime salts is broken up and the casein separates as an insoluble substance. This is apparently what takes place when milk thickens through souring. Although this form of casein is quite insoluble in water, it is readily and completely soluble in weak solutions of caustic alkalies, or in solutions of washing soda and baking soda. Practical use is made of this property in determining the fat in thickened milk by means of the Babcock tester. If the clot that is formed in sour milk is allowed to stand, some of the clot, or casein, appears to combine with the lactic acid of the milk and gradually go into solution. Unfortunately, we have no recognized terms to distinguish these different forms of casein. Dr. Van Slyke, of Geneva Experiment Station, New York, has suggested the name of "calcium casein" to designate the casein of normal milk, because here we have casein in combination with calcium. Then as the calcium is separated in the clotting of the milk, he suggests the name of casein for this substance and casein lactate for the material formed by the union of casein with lactic acid.

Casein of normal milk is also acted on by the enzyme of rennet with the formation of an insoluble product. Acidity and heat aid the rapidity of the action. The casein of this curd is not separated from the lime salts, and in this respect the rennet coagulated material differs from the clot of sour milk. Indeed, the presence of soluble lime salts is essential to the coagulation of milk with rennet. Consequently, as heating milk to near the boiling point renders some of the lime in it insoluble, pasteurization or sterilization cannot be practised in the ordinary process of making cheese. The ripening of cheese, so far as the curd is concerned, is the breaking down of this insoluble rubbery curd into soluble compounds, much the same as would take place in the process of digestion in the body; and, as this is brought about by the ferments of the milk and rennet, and moisture and warmth are favorable to their action, the condition of the curd and the temperature of the curing room are controlling factors in this ripening process.

The albumen of milk is a substance in many respects similar to the white of an egg. It is not coagulated by acid or rennet as casein is, but it is readily coagulated by heat.

The casein and albumen of milk are easily digested, and are very nutritious forms of protein; but, while very valuable in milk and cheese, their presence in butter is not desirable, as they furnish nitrogenous food for the organisms which may cause putrefaction changes and help to destroy the flavor of the butter.

The fat of milk is better understood than the proteins. Yet it is not a simple substance, but, on the contrary, a complex mixture of a number of fats. The fat of the animal body is a much more simple substance and is made up of three different fats, known as palmitin, stearin and olein. The first is a comparatively soft fat. stearin is a hard material, so hard that it will break into lumps that will rattle in a bottle at ordinary room temperature, and olein is so soft that it is almost a fluid. The animal fats differ in the proportionate mixture of these three substances, and, consequently, in their hardness. Besides these three fats, the fat of milk contains several others that give to milk fat its characteristic properties. Chief among these is butyrin. If for any cause butyrin is broken up, the butyric acid liberated gives butter the odor common to rancid butter.

These fats of milk are all odorless under normal conditions, but they readily take up and retain undesirable odors derived from food or surroundings and these are naturally carried on into the butter. The hardness of the butter fats is also readily influenced by the feed of the animal. Thus, straw and other fibrous foods, cottonseed meal, etc., tend to produce hard fats, while pasture grass, linseed meal, etc., form softer fats, and these characteristics are brought out in the butter.

Olein is not only a soft fat, but it is an unsaturated substance, *i.e.*, when exposed it will take up something from the air and change in nature. A more pronounced example of this unsaturated condition is seed in linseed oil. This is known as a drying oil, because, when used to oil a floor, for example, it dries and hardens, whereas olive oil would not harden as it is a saturated substance. Olein forms 30 to 35 per cent. of the butter fat, and, as it is unsaturated, it possibly furnishes one of the reasons why it is necessary to place butter away from the air and light. There are, however, other changes that take place in butter that are associated with the loss of flavor and quality, but none of these have been studied out. Indeed, it is not known exactly what gives the desired delicate aroma to good fresh butter, and it is probable that it will be a long time before science will be able to separate and identify this elusive material.

The sugar in milk has apparently been placed there more as a food than as a condiment. It is not nearly as sweet as cane sugar; if it were we would probably soon take a dislike to milk; but it is easy of digestion, even by young children. It does not, like most sugars, readily undergo alcohol fermentation, but it does break down into lactic acid with comparative ease. Thus the sugar is the material from which the acid of milk is formed and must decrease as the milk sours. However, as the lactic acid organisms cannot live in more than a small amount of acid, the action cannot continue unless some substance, such as baking soda, be added to neutralize the acid formed. This is the principle underlying the use of soda in preserving milk. The action of most of the other preservatives is to destroy, or hold in check, the action of the organisms which break down the sugar into acid. Both forms of treatment are objectionable.

The mineral constituents of milk, like some of its other constituents, have not been fully studied, but, part of these substances must be in organic combination, as with casein, and part as complex salts that are influenced in holding normal milk in the condition we have it.

From the foregoing, it is quite evident that milk is not a simple substance. Its elaboration in the animal is largely a mystery to us, and the same may be said regarding the details of its composition. An enormous amount of time and money has been spent in studying it, but we are still without definite data on many points. Indeed, we have still much to learn about how to practise and how to handle milk properly in order that we may get this valuable food in its most wholesome form.

Mr. Gibson: I would like to ask Prof. Harcourt whether milk contains more of the elements that will build up the human body than bread. I saw the other day that an estimate had been made, speaking of the expensive living, that only 5 per cent. of our money was spent for bread, and that bread contained all the elements that will build up the human body, and that if we would eat more bread we would have better health and save money. I want to know for my own information which is the best—to go back to the milk or to keep after the bread.

Prof. Harcourt: As you have got past the age of infancy, I would advise you to take both. There is one thing about milk that is an offset to its being classed as a complete food. It is a complete food to the young animal, but as a person grows

older and has got to put out more energy, then it is too bulky. You would have to drink too much milk to enable you to work during the day, and you would have to mix some solid food in it. For actual flesh and muscle producing, skimmilk would be ahead of sweet milk, and I would like to say right here that too often throughout this country we think of skimmilk being good for pigs but not good for children. That is a big mistake. Skimmilk is worth within very little or as much as the whole milk as a food.

MR. GIBSON: Would bread and milk be better food for an old man than each taken separately by itself?

PROF. HARCOURT: There is no doubt about it. There is no better balanced ration you can get for the human subjects than good bread and milk. One of the chief causes of expensive living to-day is because we use so many luxuries. In case we use the actual necessaries of life, there is no better ration that we can get than a good mixture of bread and milk.

A MEMBER: Can you boil milk so as to injure the albumen in that milk for condensing purposes. Will it have such effect as to injure the milk?

PROF. HARCOURT: I cannot answer that question positively, but this much I do know: That while we are only speaking of boiling the milk we say that scum which comes on the top is the albumen; but I think it has been pretty well settled that that is not the albumen. I do not think the albumen is hurt as a result of condensing. Some of that may be calcium citrate. Albumen is coagulated by heat. You can take the white of an egg and coagulate it, but you cannot coagulate the albumen in the milk. We can take it out after we have taken the casein away and coagulate it in certain degrees of acidity, but you cannot thicken that albumen in the presence of other substances.

A MEMBER: The reason I asked that question was that in the United States there is a good deal said about boiling milk, and it is said that if you boil it too much you are hurting the albumen and taking away the effect of the albumen.

PROF. HARCOURT: Of course there are certain complaints made by European medical men who claim that pasteurizing the milk affected it, their claim being that the action of the heat on some of the material, more especially on the ash material, changed the solubility of it, and thus brought about some of the complaints that are due to insufficient ash constitutents.

CARE AND RIPENING OF CREAM.

GEORGE H. BARR, OTTAWA.

This address will be found in the report of the Eastern Dairymen's Convention, page 53.

A MEMBER: Which system would advocate for collecting cream—the individual cans or large cans.

MR. BARR: Where practicable, I would say individual cans in all cases. I know that its not always practicable in many cases in Western Ontario, but I think the individual can is by long odds the best way to collect cream, because then you know what each individual patron is doing; you have the tester, and you can take a sample and inspect all the cream. There is the objection that if you put these tin cans out on a long route you would not get your cream in as low in temperature

as you will if you have jacket cans; but still I think the advantage of having individual cans will offset any advantage you have by the other method.

Q.—You would not advocate using a tank?

A.—In my judgment a tank is a poor thing for collecting cream.

Mr. Gibson: In view of the fact that men are finding it a hard matter to make both ends meet in these days—I paid 36 cents for butter yesterday—what would you recommend to take care of the health and build up the body: which would be the cheapest and best to use, bread and butter or bread and cheese?

Mr. Barr: I know that I would want good bread and a lot of butter and cheese as well. I was very much interested in that discussion on milk, and I was pleased to hear Prof. Dean say that there was not enough skimmilk used in this country. One of the worst things in our large cities is the fact that our poor people will not buy skimmilk, because it is one of the most wholesome.

PAYMENT FOR CREAM AND BUTTER ACCORDING TO GRADE.

C. Marker, Calgary, Alta.

Before leaving Calgary for your Convention at the request of Mr. Ruddick, I thought it seemed a long way to travel—2,000 miles each way—even for the privilege of addressing this Convention, but I really feel now that it is worth coming a long distance to meet the number of dairymen we have here to-day, and to listen to the very interesting and instructive addresses delivered.

Some years ago I attended a Convention here, and a number of very excellent addresses were given, full of information, and I hope that I benefited some by all of them; but there was one thought which struck me more particularly at the time and it has since helped me a great deal in my work. This thought was contained in a phrase pronounced by Mr. Publow at that time. In reporting the millions of pounds and the value of the butter and cheese made during the season, he said in each case that if all had been as good as the best the revenue to the farmers would have been several hundred thousands of dollars more. "All as good as the best" That was also the key-note to Mr. Publow's address last night. It has been the key-note of every address delivered here, even if it has not been said exactly in those words, and I think it is a good motto. It is one that I remembered, and took every opportunity of passing on to our dairymen in the West—"All as good as the best."

We read of the youth who set forth with the motto "Excelsior" emblazoned on his banner. We also know what happened to him: blindly following his motto he passed beyond the associations of his ken and did not apparently know where and to what he was going. It seems to me that this other motto "All as good as the best" is much more useful in our every-day mundane affairs. It is a good motto with which to start a day's work: "All as good as the best." The best that we have already attained ought to be the lowest standard for what we are going to accomplish next, and in our efforts to reach that standard we shall find that another, and higher, has been set up, I would like to leave that thought with my co-workers, the dairymen, because there is an opportunity every day in every department of our work to use the principle involved in that thought. I consider that we who are identified in whatever capacity in the promotion of the interests of the dairy industry are not doing our full duty if we do not practice and advocate, in season and out of season, principles and methods that we know will result in the betterment of the quality and values of our dairy products.

The work that I am to speak about this afternoon is "The Payment of Cream and Butter according to Grade." By emphasizing *the best* we should encourage the production of more of the same kind, and we in Alberta like to emphasize the best by paying a premium on it. In connection with this work I should tell you that the Government of Alberta, through the Department of Agriculture, has been interesting itself during the past six years in the promotion of dairying. The work was originally started in 1897 by the Dominion Department of Agriculture, under Prof. Robertson. In 1906 it was taken over by the Provincial Government, and an officer was appointed to supervise the dairy instruction and dairy development. In the West we are working very largely under pioneer conditions. A few years ago we had no outside market to speak of. We had no regular market where we knew absolutely that we could dispose of our products to advantage. That was the reason why the Government took a hand in the matter, and undertook not only to operate creameries for co-operative associations who might desire that service, but also to find a market for the product of these creameries. It was naturally felt that no markets but the very best would do, and the Department aimed to have the quality of the product such as would commend itself to the discriminating buyer in the markets which were then available.

There is no demand for an inferior quality of butter in normal markets except in limited quantities and at prices considerably lower than the figures paid for the quality article. Quality stimulates demand, and therefore increases consumption.

As our best markets have gradually become more and more exacting, and appreciative, in the matter of quality, we realize the need of constantly working towards higher quality standards—to "All as good as the best."

Outside of the regular instruction work, whole season's butter scoring contests were inaugurated by the Department between the creameries and the butter makers individually. This was done to encourage the men to do their work in the very best way possible, and to enlist the co-operation of the patrons in the contest through local pride in their creameries. We consider that we had as competent a staff of buttermakers as could be found in any similar territory in the Dominion, yet we have found considerable difference and variation in the quality (flavor) of their butter, not only as between the different creameries, but also in the butter output from individual creameries, showing that there was a certain field which had apparently not been properly covered under our system of instruction. While the scoring contest had been instrumental in bringing about uniformity and excellence in workmanship at the creameries, the really indifferent patron on the farm had not yet been reached.

We have endeavored to be of as much assistance to the patrons as possible by holding local meetings from time to time in different districts and by giving them at those meetings, through the Press and special circular matter the benefit of whatever advice and information we had, which, if applied to their conditions or localities, would enable them to work to better advantage. We invariably pointed out and emphasized the fact that if we could turn out a finer quality of butter we would get more money for it because we could get a larger market. We also emphasized the further fact that in the last analysis the patrons are largely responsible for the quality (flavor) of the butter made in their creameries. I suppose we might call this moral suasion, but while this particular brand of suasion was tendered in generous measure we did not seem to secure the results that we hoped and worked for. Our experience in this respect has been exactly in line with your own. There is work to be done so long as even a small percentage of our dairy products comes under the classification "inferior."

The question with us was along what lines can the educational work be most effectively done? Or can our present system of educational work among the patrons be supplemented by a further agency, looking towards a permanent improvement in the quality of their cream supply? The answer seemed to be this: In order to make a general improvement in the quality of the butter output of our creameries the quality of the cream supply must be improved also, and in order to make the improvement of the quality of the cream supply an object of financial interest to the patrons we must institute a system of distribution of the proceeds from the sales of the butter in which quality will be recognized in a substantial way.

As all changes and reforms are regarded by many with more or less suspicion and apprehension, we realized the necessity of making a thorough preliminary enquiry and survey of the local field of one of our largest creameries in order to ascertain the principles and details upon which such a system could be satisfactorily based. One of our instructors was placed in charge of the survey in co-operation with the local manager of the creamery, in the midsummer of 1909. The work consisted in making, and recording the results of, a very careful examination of each sample of patrons' cream, brought in from day to day by the cream haulers. This preliminary survey revealed to us certain facts. For instance, it is generally taken for granted that the patrons who live some distance from the creamery are placed rather at a disadvantage and that their cream necessarily deteriorates in transit and cannot reach the creamery in as good a condition as the cream furnished by the patrons who live nearer the creamery. That assumption did not hold when we came to sum up the results of this preliminary survey, because we found that some of the best cream that came in was furnished by patrons who lived in the outskirts of the cream routes, and that many of these supplied better flavored cream than the man who lived nearer the creamery.

We also found in this preliminary work that the quality (flavor and condition) of the cream furnished by the patrons could be satisfactorily graded at the creamery by a sample taken and brought in by the haulers who use the large jacketed cans on their routes. When the cream is brought to the creamery in individual cans the grading is done direct from the cans.

We found that some patrons furnished good clean flavored, and others furnished poorly flavored, cream all the time. Others again sent cream of both kinds at different times.

Some patrons furnished good, clean flavored cream because they handle it properly at the cost of both time and money spent in equipment. Admitting that such cream is essential to the manufacture of good butter and that good butter is worth more money in a normal market than poorly flavored butter, why, then, should not a careful patron be rewarded to some extent at least for that time and money so spent?

After this preliminary survey we considered the work well worth following up, and arranged to have all the other creameries take it up for the remainder of the season. Circulars were sent to the patrons of the creameries concerned, saying that we were going to grade their cream regularly at the creamery, and that while the grading would, no doubt, eventually be taken as the basis for the payment of a premium on quality, no change would be made until we had had an opportunity of consulting them, and that unless we were able to convince them that it was practicable, right, and fair we did not wish to urge the change. The results of this preliminary work at all the creameries was summed up and placed before our creamery and dairy meetings during the winter of 1909-10, and before the Provincial Con

vention held in the early spring of 1910. We were able to show that there was a considerable difference in the quality and value of the butter made in different creameries and the patrons agreed that the proper way to secure good flavored, well cared for cream was to pay a premium to the men who would go to the expense and trouble of producing it. The patrons were perfectly well aware that that was fair. Creameries are some of the few commercial institutions where the quality man has patiently submitted to going "snooks" with his indifferent or careless neighbor. How much longer will he submit to it? I do not know of any other branch of normal trade where grading and quality basis payment is not followed. Mr. Publow told you last night that in the stores of the Old Country they buy and sell according to quality. If the creameries or their patrons can get a line on the requirements of the ultimate market, the consumer, they will be in a better position to cater to them, and I hope to see the day when the very delicately adjusted mechanism of trade will be prepared and willing to give the producer as much help and information as possible towards marketing his products to the very best advantage. This means that the preference of the markets should be adequately expressed in dollars and cents. In other words, payment according to quality.

It was agreed by the patrons and managements of the Government Creameries that commencing by the season of 1910, a premium of two cents per pound should be paid on all first grade butter marketed by the Department on their behalf, so, you see, the patrons were not only consulted before any change was made in the system of payment, but they were convinced that the change would be decidedly for the better.

Now that there appeared to be a chance of the quality creameries and the quality patron getting into their own they encouraged the movement as in the past they have championed the principles of properly equipped creameries, efficient service in field and factory, correct sampling and testing methods, and clearly detailed business-like statements of returns. Such people are not likely to continue in an old groove when they see the better, way, and I would advise the management of any creamery who wishes to adopt a quality basis system of payment to consult and advise with the patrons. Get them together and show them that it is to their advantage, as well as to yours, that your creamery should turn out the very best quality of butter. and then, in order to secure their co-operation, it is only fair that you should show them how they will profit in the transaction, provided they furnish the right quality of cream. Establish and define definitely and clearly your grade and premium standards based upon local conditions and upon the requirements of your best markets. I do not see how any patron could possibly take objection to the premium principle, because if he wants to get a higher price he can get it simply by complying with the requirements. That is one feature of the proposition which appealed to our people in the West. It was there for them, and their acceptance or rejection of it was entirely voluntary. It was not a question of "If you do not do thus and so you will be fined," but "If you comply with the requirements of the best trade you will get a premium." That is the way we appealed to our creamery patrons. That is how we found in them "the point of contract."

Now I will explain the mechanism of the work. First of all, the cream hauler starting off on his route, receives his equipment at the creamery, consisting of jacketed cream cans, weighing pail that will hold about five gallons of cream, a pair of brass beam scales or stilliards, a strainer and a stirrer with a metal handle, a thermometer, a carrying case for the four-ounce cylindrical sample jars, and a

drivers' cream book. When we standardized our testing equipment a few years ago, we adopted the four-ounce cylindrical jar with screw cap as a standard for both composite and cream-hauling samples.

When the hauler arrives at the house of the first patron he records in his book the weight and the temperature of the cream picked up. We recommend cream haulers to pour each patron's cream through a strainer into the weighing pail, for the purpose of assisting in the process of mixing. After thoroughly mixing the cream he weighs it and takes a sample, which is put into the sample jar bearing a label with the name and the number of the patron. The bulk of the cream is poured into one of the large gathering cans. He then rinses out the weighing pail and starts off for his next place. At the end of his journey he delivers to the buttermaker his load of cream, his case of samples and the record of weights, etc., which he has taken. The buttermaker in making up his composite samples for the Babcock Test, at the same time grades the cream from the samples which have been brought in. For this purpose the samples are heated to the temperature of the palate, about 98° Fahr., in order that any off flavors may be easily detected. The grade and defects, if any, are noted on the cream-hauler's slip opposite the name of the patron. When the composite sample is made up it is put back into the rack and finally placed in the refrigerator or other dark and cool place. The composite jar is closed tight so that there is no chance of evaporation.

The buttermaker or secretary uses a cream sheet similar to the form shown, upon which he enters the necessary particulars from the cream-hauler's slips at the end of each testing period of two weeks. In the first column we have the patron's number and name. Then the dates and columns for the individual deliveries. At the end of two weeks the cream deliveries are totalled first and second grade, and the per cent. of butter-fat in the composite sample ascertained and recorded, and the pounds of butter-fat extended into the proper columns, and afterwards posted in the patron's ledger in the usual way.

As to grade standards for cream. Our patrons thoroughly understand that we mean by FIRST, or premium GRADE, *cream, preferably sweet, from which a competent buttermaker can make first-class butter.* SECOND GRADE is any cream that does not measure up to that standard. The grading is done by the buttermaker simply by his sense of taste, for the reason that a buttermaker may find it rather difficult to demonstrate to a patron by chemical or mechanical tests the different grades of cream. If he can say to him, "Taste this sample, and that, and note the difference; this is what we call first, and that second grade," the patron knows exactly what is meant, and will be able to follow the work intelligently. We learn by comparison, and we may teach by the same process.

In order to ensure uniformity in the work of grading, the buttermaker in charge of the creamery should:

1. Furnish the cream-haulers with perfectly clean and dry sample jars, without washers in the covers, and see that each of the sample cases be enclosed in three or four thicknesses of jute—ordinary bags will do—and that the haulers be instructed in the necessity and object of keeping these coverings wet from the time the first sample is taken on the route and until the case of samples is delivered at the creamery. The object being to keep the samples cool in the haulers' cases.

2. Note and record on the driver's slip for the day the temperatures of the samples and of the cream in the cans, immediately upon arrival at the creamery.

3. Examine all samples, for grading purposes, at a uniform temperature of about 100 degrees Fahr., recording the grades as suggested on the hauler's slip.

Form D. 6. 8,000 5-10

CREAM SHEET.

Sheet No.....

Date of Test.....

Names of Test Committee Present .....

From.....to.....191.... inclusive. at .....Creamery.

Patron's No.	NAMES (in full) (Give P.O. address on First List for Season and for every new patron).	Pounds and Grade of Cream and Date Supplied. (Date)		(Date)		(Date)		(Date)		Total Pounds Cream.		Per cent Fat.	Pounds Butter Fat.		Total Butter Fat.	Butter taken by Patrons.
		Grade 1	Grace 2	Grade 1	Grade 2	Grade 1	Grade 2	Grade 1	Grade 2	Grade 1	Grade 2		Grade 1	Grade 2		
	Totals															

The cream-haulers should:

1. See that the samples taken for the creamery are absolutely representative of the quantity and quality of the cream collected.

2. Take, and record in the driver's books, the initial temperatures of the cream collected from each patron.

3. Have weighing pail properly rinsed out prior to weighing and sampling each patron's cream, so that the flavor of the sample be not affected by the leavings from the previous weighing.

4. Arrange for a sufficient supply of cold water at each patron's place, to rinse out the weighing and sampling outfit, and throw enough on the covering of the sample case to keep it wet.

5. Understand the principle and method of grading cream and so be able to advise the patrons in the matter.

6. Take a personal interest and pride in delivering all cream and samples at the creamery in the best possible condition and be as helpful as possible to the patrons and to the creamery management.

Having described, briefly, the principle of grading, why it was adopted and how it is conducted, I shall now show you the results of the past two years' work on the grading of the butter made in eleven of the creameries.

The grading and premium payment was commenced in the year 1910, and in order to have comparisons we have records of our butter scores for 1909 to which I wish to draw your attention. This may be considered an average season's make for these creameries; according to the actual average figures there was 72.39% of First Grade butter in the season's make, 1909; the rest we called Second Grade. The figures in brackets indicate the percentage of the butter which could be called "extras" on account of reaching scores equivalent to forty-one points and over for flavor. There was not a very large percentage (9.13) of "extras" during the season of 1909. The horizontal lines on the chart represent the quality of the butter output from these creameries for three seasons. The figures in brackets indicate the percentage of "extras" in each season's output. We have in 1910 an increase of from 72.39% to 84.53% of Firsts as a result of having adopted the premium system, a net gain of 12%. The gain in "extras" was over 17%. Then for the season of 1911 we have another increase in first grade, a corresponding decrease in seconds, and a further marked increase in "extras." The figures given in the chart show a marked improvement from year to year, not only in the reduction of the proportion of second grade butter, but in the increasing proportion of "extras," and that is exactly what we want. Creamery numbered 1 is located on the G. T. Pacific line at a place called Viking, and Mr. J. J. Skalitsky is the buttermaker in charge. In 1909 the butter output of that factory contained 33.6% of "firsts"; in 1910, 98.26%. I was at Viking attending the annual meeting in the spring of 1911, and I showed a chart something like this. One of the patrons said: "Now, the next time you come up here you will show us no black marks (seconds), and the proportion of 'extras' will be pretty well on towards the end of the score." Here it is in 1911: 100% firsts, of which 57.43% was "extras." These men are loyal Vikings; they want to make a success of their creamery and they are doing it. The creameries have not all done as well as that, but I am merely showing you what it is possible to do, and if the patrons at Viking can do it under their pioneer conditions in that new country, then others can do it.

It will be noted also that the average selling price of butter for the season 1911 was 25.22 cents per pound at the creameries. Column A shows the average

PROVINCIAL GOVERNMENT CREAMERIES, ALBERTA—GRADING OF BUTTER.

Creamery serial No. (1)	Summer 1909.		Summer, 1910.		Summer, 1911.		Cents per pound, 1911.	
	% Firsts. (2)	% Seconds. (3)	% Firsts. (4)	% Seconds. (5)	% Firsts. (6)	% Seconds. (7)	A (8)	B (9)
1	33.6	66.4	98.26 (30.07)	1.74	100. (57.43)	.....	25.33	25.76
2	90.2 (25.80)	9.8	93.37 (46.06)	6.63	96.36 (38.71)	3.64	25.31	25.63
3	90.1 (12.27)	9.9	91.79 (36.32)	8.21	93.96 (39.75)	6.04	25.23	25.42
4	57.9	42.1	X 87.95 (13.44)	12.05	99.81 (35.43)	.19	25.01	25.30
5	77.7 (7.25)	22.3	84.43 (18.38)	15.57	85.88 (23.41)	14.12	25.25	25.23
6	55.6	44.4	92.45 (22.38)	7.54	86.43 (21.19)	13.57	25.29	25.23
7	84.9 (7.68)	16.1	96.97 (28.08)	3.03	82.81 (27.87)	17.19	25.18	25.18
8	55.3 (3.23)	44.7	83.93 (48.21)	16.07	84.00 (32.97)	16.00	25.09	25.03
9	30.3	69.7	X 84.10 (10.54)	15.90	76.78 (24.19)	23.22	25.06	24.85
10	48.1	51.9	X 74.89 (12.90)	25.11	X 53.52 (15.02)	46.48	25.18	24.36
11	38.6	61.4	X 30.04	69.96	26.69 (2.90)	73.31	25.26	23.74
Average	72.39 (9.13)	27.61	84.53 (26.21)	15.47	85.67 (32.87)	14.33	25.22	25.22
Churnings scored	1,372		954		1,002			

price each creamery—numbered 1 to 11—would have received for its season's butter output according to the "pooling" system of payment. Column B, on the other hand, shows what each creamery actually received on the basis of 2 cents per pound premium on all first grade butter. In other words, creamery No. 1 not only earned but received 2 cents per pound more than creamery No. 11. The letter X in columns (4) and (6) indicate for each season the creameries which did not pay their patrons a premium of 2 cents per pound of butter-fat contained in their first grade cream. All the others paid the premium.

A word now about the distribution of the proceeds from the sales of the butter on the basis of a premium of 2 cents per pound.

The creameries to which I have referred are operated on the co-operative principle. The receipts, less actual operating expenses, are divided among the patrons. Before the rate per pound of butter-fat, or butter, is struck, provision is made for the premiums earned during the settlement period. For example, a creamery makes 10,000 pounds of butter during a settlement period, and has the sum of $2,000 to distribute among the patrons. The total butter-fat received in the cream was 8,500 pounds, of which, say, 6,375 pounds or 75 per cent. was contained in the cream grading "firsts." Deducting the premium fund, 6375.2=$127.50, we have the sum of $1,872.50 to divide equally on 8,500 lbs. of butter-fat, giving us a *general rate* of 22.03 cents per pound. In other words, our rate for "seconds" is 22.03c. per pound, and for "firsts" 22.03 + 2 = 24.03c. per pound.

If the payment be made on the basis of manufactured butter with the same percentage of "firsts," the results will be as follows, viz.: 7,500 lbs. at 2c. = $150. Deducting this amount from the original $2,000, we have $1,850 to divide equally on 10,000 lbs of butter, leaving a general rate of 18.5 cents per pound. In other words, the rate on "seconds" is 18.5c. per pound, and the rate on "firsts" is 18.5 + 2 = 20.5c. per pound.

The statements accompanying the payments to the patrons show among other details (A) the quality of butter or butter-fat with which he is credited, general rate and amount, (B) number of pounds of "firsts" premium rate 2 cents per pound, and amount of premium. These two sums added represent the total payment. Statements made out in this matter call attention continually to the premium principle. A specimen statement is shown herewith:

THE.....ASSOCIATION
In Account with
.....
Patron's No.....

	Dr.		Cr.	
Dr.	$	cts.	$	cts.
To Advance on at.....cents per lb. of Butter Fat.....				
" Premium on.....lbs. of Butter Fat in Cream Grading First...				
" Butter taken out.....lbs.....				
"				
Cr.				
By.....lbs. of Cream containing.....lbs. of Butter Fat and yielding.....lbs. of Butter.....				
Supplied during.....weeks ending.				

Several of the best privately operated creameries in Alberta have also adopted the grading and premium system. These creameries, as a rule, buy the butter-fat outright from their patrons and pay 2 cents per pound more for butter-fat in first

grade cream than for "seconds," for butter-making purposes. I may mention here that the Calgary Central Creamery commenced operations in the spring of 1910, and adopted the grading system at the start, paying a premium of 2 cents per pound of butter-fat in first grade churning cream. The result was that, notwithstanding the keen competition among cream buyers along the railway lines tributary to Calgary, the Central Creamery attracted to itself a generous supply of first grade cream. During the second year in operation the Calgary Central Creamery had the second largest butter output of any creamery in Alberta. It is the old story: the wagging tongue of a satisfied patron is the best advertisement a creamery or any other business institution can have.

Permit me a few observations in conclusion.

A creamery enjoying a quality market for its butter is not doing full justice to its best patrons unless it, in turn, provides them with a quality market. When the patrons are given quality markets for their cream they will soon take advantage of the educational facilities available through various local and Departmental channels, through the press, and through their creameries. We shall not then see so many empty chairs and benches at our Farmers' Institute and special meetings where dairy matters are discussed. A quality market is a good educator.

As to whether any individual creamery should or should not take up, and follow, the grading and premium system, that is, of course, a question for local consideration. In my judgment it is a question for the quality patrons to decide. They are, in most cases in the majority. If, and when, they choose to assert their rights, the reform must come sooner or later in proportion as their demands are unanimous and sustained. So long, however, as they are satisfied to share the losses resulting from careless and haphazard methods, there is, perhaps, no one who has the right to say that they shall not.

I think you will agree with me that nearly all the objections that have appeared, in print at all events, against the adoption of a grading system at our creameries have appeared over or under the name of buttermakers, creamery managers and others who, in my humble opinion, should have known better. It is not of much use to cry out for a better quality of cream if we, in the next breath, proceed to enumerate reasons why the patrons will not, cannot, or need not improve their methods or their facilities for properly handling and caring for it.

Instead of spending valuable time in formulating ingenious excuses for the careless or indifferent patrons, we should formulate and systematize means of improvement, and help to so shape market conditions that quality improvement will not only be demanded, but also rewarded.

This is work for leaders, and leads towards the ideal "All as good as the best." This is work worth while.

As to our work in Alberta. The introduction and application of the grading and premium principle in the creamery business has gradually and generally improved the quality of the cream supplied to the creameries, it has materially raised the general standard of quality of the creamery butter production and enabled the best creameries to secure a premium in the form of a higher average price for their butter. As the means to an end it has become fully justified. In individual cases, generally speaking, one's market will determine whether and when it be necessary or advisable to churn the different grades of cream separately.

The quality payment principle is gaining momentum. In the Province of Quebec the Department of Agriculture is conducting weekly sales at Montreal of butter and cheese for a number of butter and cheese factories upon the basis of

grade. The Dairy Commissioner of the Province of Saskatchewan informs me that the creameries of that Province will undoubtedly adopt the premium system throughout during the present year, the preparatory work having already been done. Professor Mitchell, of Manitoba, reported at the Dominion Dairy Conference at Ottawa last month that the two largest creameries in Manitoba had excellent results from their grading operations last year.

I expect that nearly all the creameries of Alberta, certainly all the best creameries, who have not yet done so, will this year pay for their cream supplies upon the basis of grade.

It was my privilege to address the Dominion Dairy Conference at Ottawa last month on this subject, and a unanimous resolution was adopted by the conference recommending creameries, especially those following the cream-gathering plan, to adopt a system of grading and premium for quality payment.

I hope I have been able to interest you in the matter, and I assure you I appreciate your kind and patient hearing. I am glad to see that the dairy industry is making good progress in Ontario. It is gratifying to us in the West, because we feel that the demands of the army of consumers is increasing out there much faster than the local supply, and I can assure you that in the West you will find a market that will appreciate, and pay for, quality. That is why we found it prudent to take up the grading system that I have just described, which has enabled us to cater more successfully to the requirements of the people who are discriminating in their choice, but willing to pay a good price for the right article.

SHORT ADDRESSES.

T. Mayberry, M.L.A.: The great possibilities of the dairy industry were briefly touched upon and excellent suggestions for the carrying out of the methods necessary for such expansion were made. The necessity of emphasizing the fact that our dairy instructors were doing all that could be done for the farmers was made very clear. The history of dairying in Oxford County, with its small beginning and its progress as the years advanced, was only an indication of the future.

Mr. Henderson, of the Windsor Salt Company, in the course of a short address, complimented the dairymen for their success so far; he also complimented Mr. Cowan for the excellent idea of giving prizes for the dairy farms. The manufacturer and the farmer were, in his opinion, becoming more closely associated in the work of developing the country. The prizes won by Mr. Holland and Mr. Turner were then presented by Mr. Henderson.

THE AGRICULTURAL COLLEGE AND ITS RELATION TO THE FARMERS OF THE PROVINCE OF ONTARIO.

G. C. Creelman, President O. A. C., Guelph.

That relationship changes almost every year, our style of teaching changes, and the kind of instruction we give changes, and the crops we grow change, and the kind of cows we keep change and the kind of churns we use change. Every

three or four or five years, some old thing has to give way to the new. When I left the Agricultural College this morning, according to my report for 1911, which has just closed, the registered students for the year were 1,557. That is a large number of boys and girls from all over the known world, and it might be of interest to tell you that they get a good deal of information from one another; but the great question is, What do they get from us,—what are our departments of instruction doing for the boys and girls who come there, and also for the farmers who are privileged to come there at least one day in June or two weeks during the short course in January?

In the department of Field Husbandry we do a lot of things, and it would take a long time to tell you just exactly what is being accomplished. I have had farmers come to me and say, "These plots are very nice, and it is an easy matter to pick out the weeds from a small plot like that, but that is not farming." I have only to point out to them the fact that there is not a man who is engaged in general farming who can stand up and tell me any variety of oats, peas, barley, rye, clover or wheat that has not been thoroughly tested on these plots so as to see whether they are the best that can be grown in the different parts of this Province. And we send out through the five thousand farmers who are members of the Experimental Union, these different varieties of seed for the purpose of being tested all over the Province, so as to see how the different soils and climatic conditions affect them. I have only to make a statement of that kind to an intelligent body of men, and they see immediately that while these plots may appear to be small, yet after a number of years of weeding out they have come to be the epitome of everything in the world of value, and you cannot walk on these plots any day from early in June until they are put away but what you get an inspiration on the work of general farming that leads you to go back home, as hundreds of farmers have told me they have done, with enthusiasm to do bigger and better things. They will put up with the weeds no longer. They will not be satisfied with ordinary seed or ordinary conditions. They want to have the best as they see it in these plots that are so carefully taken care of by the College. There is no reason why a man should plow and sow and cultivate the crops of this country and not have from one-third more crops than he gets, if he would only use the best seed and apply the best methods of cultivation.

We have proven that by using the plump or larger seed that a man under ordinary circumstances will get twenty per cent. more crop than if he planted small or broken seed, as they come from the fanning mill. Profesor Zavitz is just on the eve of making some announcement that will be possibly not startling, but will be of a great deal of importance to the people of this country. When you take a seed like that of wheat, oats, barley or peas, in the month of July and open it up and transfer the pollen from one strong head to another strong head, and from that get a result which you think will be stronger than the other one, and when you do that over 10,000 and get only one or two that are better, you are apt to be discouraged; but the one or two one gets from year to year, or every five years, has had so much to do with improving the general field crops of the Province of Ontario that I think you will agree with me that a man of such calibre who is willing to devote his time to that business is a man to be honored through the length and breadth of the land.

Then take the department of Animal Husbandry. Our Professor has been able to get together in short course lessons the young men of this Province, and they have taken instruction along the line of improving live-stock. How can you improve live-stock by talking about them? We have erected an eight-sided build-

ing, and the stock are brought right into the arena and the men sit around listening to the Professor and he draws them out so that they give their opinion with regard to the animals with which they are more or less familiar, and when they get through we have each year three or four hundred men going home with a pretty good idea of the kind of stock which they would like to keep on their farms, and I trust with a desire and ambition to have something better than they had in the days that are gone by.

There is no use in a man spending all his strong days of labor, working hard, gathering crops and feeding them, if he has not got first-class live stock to put that feed into. Over and over again we have had talks at this Association on feeding cattle. You may have the very best food you can produce and you can go to the Experimental Stations in this country or the United States and get the very best balanced ration, and you can mix the bran and the silage and the alfalfa and all the rest until you have it just right; but the man who is making money in the dairy business to-day is the man who is producing the balanced ration himself on his own farm, and who is feeding it to the best dairy cows he can secure by testing them, and weeding out the poor ones.

For a number of years we have been sending to the great International Live Stock Show at Chicago five men from the senior classes of the school, competing with the agricultural students of the other colleges both in Canada and the United States. We won the trophy three years in succession. This year the Institution at Ste. Anne de Bellevue stood first; the Manitoba College stood second, and we stood fourth. Canada thus secured three out of the first ten places. I want to say to you that the point was not that we won the prize, but the competition into which these young men have to go is the best thing for developing the best judges of live stock throughout the length and breadth of this land.

I claim there is a great injustice done in this Province and every other Province every year at our fall shows because of incompetent judges. We have more shows in Ontario than any of the other Provinces put together. We have nearly five hundred of them. When I used to be Superintendent of Fairs and Exhibitions I have seen Agricultural Societies that at the last moment had to look around at the luncheon table to see whom they could get to judge the sheep and hogs and the dairy cattle, and at the last moment they would pick up somebody who said he knew a cow from a goat, and he would go out and judge these dairy cattle. I saw a dentist picked up at one of our fairs because he had given a prize for the best tub of butter. He was asked to go out and judge the butter, and he did not know any more about butter than "a cow knows about a holiday."

Every afternoon we have thirty-five young men competing to see who would get a place with the five who would go to Chicago to compete against the world. A similar thirty-five are being turned out every year, and they are competent to do good work at our fall fairs. I know we have broad-minded men and good breeders of dairy cattle, any one of whom could be trusted to go out and judge at the fall exhibitions, but they are exhibiting their own cattle at the time, and we must have competent judges in every instance who are not at all interested.

Now, you may ask, "What has the fair got to do with it?" There are hundreds of young men standing around the ring, more than ever before. I have seen as many as 1,000 young men standing around the ring at the Toronto Fair, watching the judges. If the prize is placed wrongly they know, and if the prize is placed by a man who does not know his business, it is apt to have a bad effect on the ambition of these young men, and it may possibly start them off in the wrong direction.

Our Professor of Dairy Husbandry, who has charge of our Dairy Department, was with you to-day and delivered an address, and you all know what is being done at both the Kingston and Guelph Dairy Schools for the dairy industry.

The Agricultural College can take only those men who are good men in their own business, and make better men of them for that business. For a number of years the Agricultural College attempted to take students from towns and cities, or from the Old Land, thinking they could make farmers out of them. We have quit that a long time ago. You cannot make a farmer from men who have no instruction on the subject before they come to the College. Now we will take only men who have had a fair experience, either as farmers' sons, or have gone to work on a farm until they have proven that they were capable of going on and learning the business. That has worked out splendidly, and our boys are not making a special "mess" of things when they go out.

The Agricultural College is not like a big hopper to throw people into and grind them out as farmers. You cannot bring forth boys from a school in that way. We had men coming to us from fruit sections, and we found out we could not grow fruit at Guelph to the same perfection as in other places. We are 800 feet above Lake Ontario, which brings us 1,100 feet above the level of the sea. We are 800 feet above Hamilton, so you see we are pretty well up in the world. Fruit grows better down near the Lake shore, and we have secured a farm in the Niagara District to which the students may go during the summer season and spend the summer on a fruit farm, and they come back to us in the fall for class-room instruction. I do not know whether the dairy farmers get rich or not, but I do know that the fruit men are getting rich. I had three men last year in the graduating class who refused salaries of $1,200 a year as Agricultural Representatives or as instructors in Agricultural Colleges or assistants in Experimental Stations. They said they could make more money than that clear cash at home, and they turned down these jobs, and they are working on their own farms to-day. There is nothing that will help the business of agriculture so much as the fact that people are making enough money at it to be satisfied with it.

What we are trying to do is to encourage these boys to go right back on the farm and see if they know what they are talking about. They bring their book-keeping up to perfection and they know exactly what the farm made for them the year before. They knew what each tree was worth, and what a tree ten years old was worth, or when it was fifteen or twenty years of age. I asked them how they could tell these things, and they said their farms were not run by the rule of thumb any more, and that as sure as they cultivated and sprayed and cultivated, they would get an average crop from year to year. They could count on it just as you can count on a draft from the bank, and they knew they were taking no risk in going back to the farm. All we had done for them was to give them an interest in the business along scientific lines. They came to us good fruit growers, and they went away with a broader vision and bigger minds. They are just as important as any other man in the community—a lawyer, a doctor or preacher—and when they give an oyster supper in their neighborhood it won't be necessary to call in the professional men do all the speaking.

In the Poultry department we have been able to produce a pretty big chicken in one season, and they are able to get for it nearly as much as we used to get for a bull calf, and they do not have nearly as much trouble, because the old hen does most of the work.

We have found out that poultry raising is a business, and it is exceptional

for a man to go into it as a business by itself in a city or a town. We are corresponding with men all over this continent, and we find that throughout New York and Rhode Island and Maine you can buy poultry plants pretty cheap, because men had tried it and had not made good and had quit. I have men writing to me every week saying they are book-keeping in an office in Toronto or some other place, and had not good health, and were thinking of going into poultry as a business, and they want to know if they could buy an acre or half an acre and put up a poultry house and make a thousand dollars a year, and if so they are willing to give up their business and try it. We advise them not to try it. Poultry raising is just as scientific a business as any other department of agriculture.

I said to Prof. Graham, "What are you going to do about it?" He said, "The problem is with the Ontario farmer." I said, "Must he go out of the dairy business and the horse business, and go into the poultry business?" He said, "No, the land gets chicken-sick. The poultry must have a large run, and the farm is the ideal place, where they have a farmyard and the stubble field and the corn field, which is better than anything else for them to run in in the months of June, July, and August. You can keep up to 200 hens on the ordinary farm and keep them healthy and make money out of them." Prof. Graham tells me we do not want the ordinary hen any longer, but we want the extraordinary hen. The average hen in the Province of Ontario gives about five dozen eggs a year—sixty eggs. I said to him, "Is not that a good many?" He said, "Yes, if you can get 25c. or 40c. a dozen; but that hen lays eggs when all the hens are laying eggs, and you do not get more than 15c. or 20c. a dozen, and what you should do is to keep them laying." I said, "Can you do that?" He said, "You cannot do it in a day or in a year, but just so sure as you ought to keep the best calves from the best cows, just so sure as like produces like in cattle, so it will in chickens." And he has proven that statement. He has taken a pen of Plymouth Rock hens and mated them up, and saved the eggs from the hens that gave him the largest laying, and he has crossed them with males that came from some flock of a large laying strain, and now he has a pen of hens that this year gave him 259 eggs apiece in the 365 days which has closed, and one hen gave him 282 eggs. If the average farmer can make a dollar a hen with ordinary hens, what can he do by giving it a little more education? So it is possible for him to make considerable money.

I want to say to you that all we do at the Agricultural College is not confined to the students that come to us. Every year we have been trying through our experimental branch to do something for the farmers, and we have been trying through the Farmers' Institutes to allow ourselves to go to all the meetings and tell them some of the things that we believe would be of benefit to them if put into practice. But the leavening of the lump has been so slow that we have determined that we ought to get after the youngsters and start them in the direction of better farming methods.

With this end in view, two years ago, we got in communication with the Education Department, and they now send to us at Easter time from 100 to 200 teachers from the Normal Schools who are going to teach in the country schools, and they put in their last three months at our College instead of continuing at the Normal School. They come to us with the idea that we are going to teach them farming, but that is not so. Our work with these teachers has been of a great deal of benefit to the Province of Ontario and it will show greater benefits as the years go on. When they first come to us they start to look over the farm, and many of them do not know clover from timothy, or that there is more than one kind of clover. Many

of them do not know that peas and clover belong to the same family. We get them started thinking, and then they go to the laboratory and to the experimental grounds, and from one department to the other, until they have a fair knowledge of the work.

Every one of these girls receives a copy of the Dairymen's Report, and they are asked to read it, and when they come back the next day we ask them what is the most distinguishing thing connected with it. Then they are taken to the orchard, and they are taught about the insects that are injurious to the trees. We ask them if they can see anything on the trees, and finally one of them will discover a little moth, and they all see it. We ask them why they did not see it before, and they say they never thought of looking closely enough, and that it the trouble with a good many of our farmers. They do not look close enough. Then we teach them what is best to get rid of the different insects on the fruit trees, and we tell them the story of Peart, and Dempsey, and Johnson, the man who had 99% of the apples in a big orchard that he paid $17,000 for without a worm in them, and this orchard was in a county that was full of worms this year.

When these teachers get to their schools and teach the boys and girls all about these important things, and when the children go home and talk about them to their fathers and mothers, then it is going to be a great benefit to the agriculture of the Province of Ontario. There is only one thing lacking. These teachers tell me that when they go back and try to do this work in the country schools, they are often met with opposition from the very people that they are desirous of helping. Sometimes the farmers will say they do not want their Johnny to waste his time in school talking about bugs when he is sent there to get educated; to leave the bugs out and they will look after that part of it at home. That is not the general thing, but yet the teachers tell me that they are often met with opposition of that kind. Unless we can keep all these things practical, we will get away from the masses of the people and will not benefit them as we should.

What we do for the boys we also do for the girls. We found for a long time there was a growing need among the women for some instruction with regard to their life work, and the women did not know it and the men would not see it anyhow. There are thousands of farm homes where if the farmer would take $25 and put it down on the kitchen table and say, "Mary, that is yours, do with it as you like," they would have a kitchen sink in the corner, and new paper on the dining-room wall, and nice pretty things all the way through. What does Mary get out of life in many farm homes to-day? She washes the dishes in the morning and they are dirty at noon; they are washed again and then they will be dirtied again after supper, and then she has a good appetite for sleep. I am told on the authority of the Deputy Minister of Agriculture of the Province that not five per cent. of the women of the Province keep servants. I am surprised at that. He says the mothers and daughters and grandmothers and mothers-in-law do most of the work themselves.

Sir William Macdonald, of Montreal, came to Dr. Mills and said, "I have made a lot of money in the manufacture of tobacco, and I would like to spend some of it in an educational school like your own, and if you will establish a women's department, I will build it." He kept his word to the extent of $200,000, and then we opened the doors for the farmer's daughters to come in and also the daughters of the people in the towns and cities. That school has been patronized to the extent that for this year, 1912, on the 1st of January, we have eighty applicants more

than we can accept. Every room is full to-night and we are turning the city and town people down in favor of the farmer's daughter.

The work we teach in this school is so important, that the girls are willing to give up the ideals they had in life to learn to do house work, and I have never known one to go out of the Institution without saying to us that the happiest days of their lives were spent among the girls there, and that they learned a lot of short methods of doing work and they appreciate very much the instruction they had received. The women who leave that Institution become the leading citizens in their community.

Col. J. C. Hegler presented Mr. Menzies with the three prizes won by him: 1st, a gold watch presented by Marshall Dairy Laboratory, Madison, Wis.; the second a trophy donated by the Imperial Bank of Canada, and the third a silver trophy for receiving the highest score as an exhibitor for three years in succession.

REPORT OF COMMITTEE ON RESOLUTIONS.

We have pleasure in submitting the following resolutions:

1. "That we, the members of this Association, desire to express our appreciation of the kindness of the Mayor, Council and the Board of Trade, of the City of Ingersoll, in furnishing the free use of the Town Hall for the Convention and for the Dairy Exhibition, and we also wish to extend our thanks to the citizens of Ingersoll for the kind reception they have given us."

2. "Whereas, the success and educational value of this Convention is due in a marked degree to the splendid addresses given by the various speakers, we desire to express our appreciation of their efforts and extend to them our sincere thanks for their assistance."

3. "That the thanks of the members of this Association are extended to the press of Ingersoll and other towns and cities for the excellent report given by them of this Convention."

4. "That the thanks of the members of this Association be, and are hereby tendered to the Canadian Salt Co., of Windsor, Ontario, through their general manager, Mr. E. G. Henderson, for the very handsome badges presented to the Company to the Association."

5. "That the thanks of this Association are hereby tendered to R. M. Ballantyne, Limited, Stratford; C. H. Slawson & Co., Ingersoll; The Heller & Mertz Co., New York; The J. B. Ford Co., Wyandotte, Mich.; Marshall Dairy Laboratory, Madison, Wisconsin; The Canadian Salt Co., Windsor, Ontario; the Western Salt Co.; Mooretown, Ont.; Ryrie Bros., Toronto; The Imperial Bank of Canada, and Mrs. W. H. Stephens (nee Miss Laura Rose) O.A.C., Guelph, Ontario, for the special prizes kindly donated for our dairy exhibition."

6. "That as Dairymen we are under great obligations to both the Ontario Department of Agriculture and the Federal Department of Agriculture for assistance rendered the dairy industry, and we wish to express our sincere thanks and appreciation of the work done by these agricultural Departments."

Upon motion of Mr. Scott, seconded by Mr. Wallace, the report was received and adopted.

The meeting then adjourned.

REPORTS OF THE DAIRY SCHOOLS, 1911-12.

EASTERN DAIRY SCHOOL, KINGSTON.

SESSION OF 1912, JANUARY 2ND TO MARCH 30TH.

Director—GEO. A. PUTNAM, B.S.A., Parliament Buildings, Toronto.
Superintendent—L. A. ZUFELT, Kingston.

Staff of Lecturers and Instructors.

L. A. ZUFELT	General Dairying.
G. G. PUBLOW	Special Lecturer in Cheesemaking.
J. H. ECHLIN	Instructor in Cheesemaking.
J. BUBO	Assistant Instructor in Cheesemaking.
J. F. SINGLETON	Instructor in Buttermaking.
W. W. DOOL	Instructor in Separators.
IVAN PUBLOW	Assistant Instructor in Separators.
D. J. CAMERON	Instructors in Milk Testing.
W. T. CONNELL, M.D.	Bacteriologist.
W. O. WALKER, M.A.	Chemist.
WM. NICHOLS, V.S.	Veterinary Lecturer.
J. A. CRAIG	Engineer.
ETHEL LAKE	Stenographer.

The regular course of instruction for students opened on January 2nd, and closed on March 22nd, after which a short course of one week was given to the Dairy Instructors of Eastern Ontario.

The total number of registrations was 49, a somewhat smaller number than the previous term. Of these, 23 wrote on the final examinations, 21 of whom were successful in obtaining a sufficiently high standing to enable them to qualify for diplomas, which will be granted them after they have managed a cheese factory or creamery successfully for one season.

During the school term, in addition to the regular course of instruction, considerable research work was undertaken in the various departments, which, outside of the value of the work itself, proved a great aid in fixing the attention of the students and gave them a greater interest in the regular work of the school.

Prof. W. O. Walker perfected a simple method of determining the amount of casein in milk, which he compared daily with the Hart Casein Test, as well as checking frequently by chemical analysis. Whilst this test may not agree absolutely with those made by chemical analysis, yet the results were so close that for practical purposes they could be considered correct. As compared with the Hart Casein Test, it was not affected by varying conditions, and was much more simple to operate, and for these two reasons gave results which were much more reliable than the "Hart" method.

With these three methods at our disposal we undertook to determine what relation existed between the casein and fat content of the milk and the actual yield of cheese. We selected two milks each day having as wide a difference in their fat content as possible. Equal quantities of these two milks were placed in different vats, whilst in a third vat the same amount was taken, having an equal quantity of each. Samples of the three vats were sent to the milk-testing room to be tested by Mr. Cameron, and checked at frequent intervals by Prof. Walker, chemically. The three milks were then made into cheese in the ordinary way and as nearly

alike as possible. The cheese were weighed from the press and again at ten days old, when they were paraffined. At this stage samples of the cheese were taken and tested for fat and moisture, the whole tabulated and placed on file in the office.

Realizing that the physical condition of the milk we received during the winter months might have some effect on the results obtained, and unfair conclusions drawn, we deem it unwise at this stage to publish the results until we are able to verify, or otherwise, the results obtained by work done under actual cheese factory conditions, which we hope to do during the present season.

In the Butter department we continued our investigation work of the previous season on the control of the moisture content of butter. The conclusions we arrived at were:

That the moisture content of the butter may be varied at the will of the maker.

That such variation is brought about by methods which usually affect injuriously the quality of the butter.

That when the maker employes only such methods as will ensure a high quality of butter, that the moisture proposition will take care of itself, and is, after all, only of secondary importance.

That when it comes to a question of "Quality *versus* Quantity," that quality be the first, last, and only consideration.

In the Milk Testing department we devoted considerable time to determining the proper method of reading the fat, especially of the cream testing bottles, as to whether the meniscus should be included or not. From our experience in previous years we always had difficulty in obtaining a respectable overrun in the butter department, and at one stage I seriously questioned the accuracy of the calibration of the test bottles, as our overrun was abnormally small and the amount of actual fat recovered added to our losses in buttermilk were always much less than the test showed we had in the cream. Mr. J. F. Singleton, our Instructor in buttermaking, when at the short course for buttermaking given at Ames last January, found this was one of the questions they were struggling with there. They found, after much experimenting, that by using an oil of a less specific gravity than butter fat, coloring the same and placing a few drops on top of the fat column, that it obliterated the meniscus and made the fat column level across the top. We used an oil colored with alkanite root which gave good results with the ordinary whole milk bottles as well as with the cream bottles, and read with a pair of calipers the exact amount of fat thus recorded. The result was quite apparent in our overrun in the Butter department, and our estimated fat content in butter, buttermilk and cream came much closer together, showing that formerly we had been reading our tests too high. By the use of this colored oil all guess work is eliminated and the results are more exact, as less variation will be recorded by making duplicate tests, on account of the variation caused by the refraction of light on the meniscus.

At the close of the School term the plant is being run as a creamery for the benefit of the patrons who supply milk and cream during the winter. In this connection a change has been made from the "whole milk," to the "cream gathering" system, to enable us to do work which will be of more educational value to the creameries of the Province, where the cream gathering system prevails almost exclusively.

L. A. Zufelt, Supt.

THE ONTARIO AGRICULTURAL COLLEGE, GUELPH, ONTARIO.

STAFF OF LECTURERS, DEMONSTRATORS AND INSTRUCTORS.

H. H. DEAN, B.S.A..... Professor of Dairy Husbandry.
R. HARCOURT, B.S.A..... Professor of Dairy Chemistry.
H. L. FULMER, B.S.A.... Demonstrator in Dairy Chemistry.
S. F. EDWARDS, M.Sc.... Professor of Dairy Bacteriology.
D. H. JONES, B.S.A..... Demonstrator in Dairy Bacteriology.
ALEX. MCKAY..... Instructor in Cheesemaking.
G. TRAVIS..... Instructor in Cream Separators, Piping, Soldering, etc.
G. RICKWOOD..... Instructor in Milk and Cream Testing.
M. ROBERTSON..... Instructor in Buttermaking.
MISS BELLE MILLAR.... Instructress in Farm Buttermaking and Cheesemaking.
N. S. GOLDING..... Instructor in Soft and Fancy Cheesemaking and Hand Separators, Farm Dairy.

The Dairy School opened on January 2nd and closed March 23rd for the regular factory and farm dairy courses. During the first week of April a short course was held for Dairy Instructors. The total registration of students was 60. In addition about twenty young ladies from Macdonald Hall Institute classes took regular instruction in the Farm Dairy.

The course for both factory and farm dairy classes were along lines similar to those reported on last year, hence we need not repeat.

The final examination papers for the factory class consisted of joint papers prepared by the Staffs of he Eastern Dairy School and that of the O.A.C., in five branches, viz.: Cheesemaking, Buttermaking, Cream Separators, Milk and Cream Testing, and Dairy Lectures. Three papers—Bacteriology, Chemistry, and Miscellaneous—were prepared separately, but we see no reason why all the papers in future may not be prepared jointly, thus placing the two Dairy Schools on a similar basis, so far as examinations are concerned.

It is expected that we shall be able to announce in our next Short Course Calendar a special course in Cow-Testing for farmers and owners of cows, during the first week of January, 1913; and another during the last week of March or the first week of April for those who wish to qualify as Supervisors of Record of Merit work. We have so many calls for supervisors that it is thought desirable we should have these men come to the Dairy School for at least a week in order that only competent men shall be sent out to do this work. Then, too, many farmers would like to know how to test their own cows. These two courses will meet these needs. No modern movement in Dairying is so important as this cow-testing movement.

We had hoped to be able to announce a special course in Ice Cream manufacture, which is now becoming quite an important "side line" with creamery men. However, owing to the fact that our Dairy Buildings are now over-crowded, we cannot at present say definitely whether or not we can offer a special course, but we hope at least to be able to give some instruction in ice-cream making and fancy dairy desserts, either at the New Dining Hall to be erected at the College this year, or at the Macdonald Institute. Dairymen need to have as many profitable "side-lines" as possible.

Before long the College will need to make provision for special instruction in Town and City Milk and Cream Trade, and also in Condensed Milk Manufacture, if we aim to keep up to the times.

H. H. DEAN.

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ANNUAL REPORTS

OF THE

Live Stock Associations

OF THE

PROVINCE OF ONTARIO

1911

Horse Breeders' Association

Cattle Breeders' Association

Sheep Breeders' Associations

Swine Breeders' Associations

Ontario Poultry Associations

Ontario Provincial Winter Fair

Eastern Ontario Live Stock and Poultry Show

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To the Honourable JOHN MORISON GIBSON, K.C., LL.D., etc., etc., etc.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned begs to present herewith for the consideration of His Honour the Reports of the Live Stock and Poultry Associations for 1911; also the Reports of the Provincial Winter Fairs.

Respectfully submitted,

JAMES S. DUFF,

Minister of Agriculture.

TORONTO, 1911.

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Ontario Horse Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Ontario Horse Breeders' Association was held in the Walker House, Toronto, February 3rd, 1911, beginning at 8 p.m.

The President, WM. SMITH, occupied the Chair.

As the minutes of the last meeting were published in the report of the Live Stock Associations, they were on motion adopted as read.

The Secretary read the financial statement for the year ending December 31st, 1910, which was on motion adopted.

The President, in his address, suggested the following for discussion:

1. Representation from the Percheron Society to the Ontario Horse Breeders' Association.

2. Special prizes by this Association to the Winter Fairs at Guelph and Ottawa.

3. Method of appointing judges for large exhibitions.

Moved by Mr. PEPPER, seconded by Dr. MCPHERSON, "That the Canadian Percheron Association should be recognized by this Association as an affiliated Record Association." Carried.

Moved by Mr. CHRISTIE, seconded by Mr. HENDERSON, "That the new Board of Directors of this Association be a committee to consider the question of asking that legislation be passed by the Dominion Parliament for the protection of the interests of horse breeders, having specially in view that all pure-bred animals offered for sale or for service should be properly recorded." Carried.

Moved by Mr. GARDHOUSE, seconded by Mr. CHRISTIE, "That the matter of nominating judges for the different breeds of horses be left in the hands of the breed associations." Carried.

Moved by Mr. HENDERSON, seconded by Mr. MILNE. "That the report as embodied in the address of the President be adopted." Carried.

A notice of an amendment to the Constitution was received by the Secretary from Mr. John Bright on January 18th, 1911, and was forwarded to the members of the Association according to the requirements of the Constitution. In accordance with this notice of amendment, the following change in the Constitution was made:

Moved by Mr. BRIGHT, seconded by Mr. TORRANCE, "That the Constitution of the Association be and is hereby amended as follows:

"That the following subsection be added to Article 3 of the Constitution:

(*e*) In addition to the members above provided for, Mr. Geo. Pepper of Toronto shall be a life member of this Association." Carried.

FINANCIAL STATEMENT

for the year ending December 31st, 1910.

Receipts.

Cash on hand as per last report	$ 135 75	
Memberships, Canadian Clydesdale Association	240 00	
Memberships, Canadian Shire Association	15 00	
Memberships, Canadian Pony Association	15 00	
Memberships, Canadian Hackney Association	15 00	
Memberships, Canadian Thoroughbred Association	15 00	
		$435 75

Expenditures:

Printing notices re Annual meeting	7 75	
Balance on hand	428 00	
		$435 75

Examined and found correct,
this 31st day of January, 1911.

(Sgd.) W. G. LINDSEY,
Auditor.

(Sgd.) WM. SMITH,
President.

(Sgd.) A. P. WESTERVELT,
Treasurer.

OFFICERS FOR 1911.

President .....WM. SMITH, Columbus.
Vice-President .....JOHN A. BOAG, Queensville.
Executive Committee .....The PRESIDENT.
The VICE-PRESIDENT.
The SECRETARY.
JOHN GARDHOUSE, Highfield.
GEO. GORMLEY, Unionville.
JOHN BRIGHT, Myrtle.

DIRECTORS.

From the Clydesdale Horse Association of Canada:

WM. SMITH, Columbus.
JOHN A. BOAG, Queensville.
JOHN BRIGHT, Myrtle Station.
GEO. GORMLEY, Unionville.
WM. GRAHAM, Claremont.
JAMES TORRANCE, Markham.
JAMES HENDERSON, Belton.
A. E. MAJOR, Whitevale.
T. H. HASSARD, Markham.
PETER CHRISTIE, Manchester.
R. E. GUNN, Beaverton.
ROBERT GRAHAM, Toronto.
WALTER MILNE, Green River.

From the Shire Horse Association of Canada:

JOHN GARDHOUSE, Highfield.
J. M. GARDHOUSE, Weston.

From the Canadian Thoroughbred Horse Society:

WM. HENDRIE, Hamilton.
ROBERT DAVIES, Toronto.

From the Canadian Hackney Horse Society:

E. C. H. TISDALE, Beaverton.
HON. ROBT. BEITH, Bowmanville.

From the Standard-Bred Horse Society:

GEO. PEPPER, Toronto.
O. B. SHEPPARD, Toronto.

From the Canadian Pony Society:

H. M. ROBINSON, Toronto.
W. R. MEAD, Toronto.

REPRESENTATIVES TO EXHIBITIONS.

Canadian National Exhibition (1912):

WM. SMITH, Columbus.

Western Fair, London (1912):

GEO. CHARLTON, Duncrief.
O. SORBY, Guelph.

Ontario Provincial Winter Fair:

WM. SMITH, Columbus.
JOHN A. BOAG, Queensville.
GEO. PEPPER, Toronto.
PETER CHRISTIE, Manchester.

Eastern Ontario Live Stock and Poultry Show:

WM. SMITH, Columbus.
J. W. ALLISON, Morrisburg.
E. WATSON, Hudson Heights, Que.

Dominion Cattle Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Cattle Breeders' Association was held at the Walker House, Toronto, February 7th, 1911, beginning at 7.30 p.m.

The President, JOHN GARDHOUSE, occupied the Chair.

The minutes of the last annual meeting were accepted as read, and on motion were adopted.

OFFICERS' REPORT.

The following report of the Officers was read by the Secretary:

WESTERN SHIPMENT OF PURE-BRED LIVE STOCK: During the past year five cars of stock were shipped to the West, three long palace horse cars and two short cars.

The following is a statement of the receipts and expenditures in connection with these cars and details regarding the number and kind of animals in each shipment:

	RECEIPTS.	EXPENDITURES.
Shipment, February 23rd (2 cars)	$581.67	$506.62
Shipment, March 29th (2 cars)	462.50	459.79
Shipment, June 1st (2 cars)	709.45	672.37

	Number in each Shipment.			Total Number.
	Feb. 23rd.	Mar. 29th.	June 1st.	
Horses:				
Clydesdales	11	9	8	28
Thoroughbreds	4	1	.....	5
Shires	2	.....	2	4
Percherons	.....	.....	1	1
Hackneys	.....	.....	1	1
Cattle:				
Ayrshires	1	7	10	18
Shorthorns	3	2	4	9
Herefords	.....	1	.....	1
Jerseys	4	.....	11	15
Aberdeen-Angus	2	1	.....	3
Galloways	.....	1	.....	1
Holstein-Friesian	2	1	1	4
Sheep:				
Suffolks	20	1	.....	21
Shropshires	1	3	3	7
Oxford Downs	5	.....	.....	5
Southdowns	.....	.....	3	3
Swine:				
Berkshires	.....	.....	6	6
Yorkshires	.....	.....	1	1

ONTARIO PROVINCIAL WINTER FAIR: The following statements show the number of animals entered in the classes for Beef Cattle and Dairy Cattle at the Winter Fair at Guelph in 1910; also the amount offered in regular and special prizes:

Beef Cattle.	No. of Animals.	Prizes Offered, not including specials.	Special Prizes Offered.
Shorthorns	39	$235 00	$150 00
Herefords	21	130 00	270 00
Aberdeen-Angus	9	128 00	150 00
Galloways	13	128 00	.....
Grades (Open)	51	320 00	5 00
Grades (Amateur)	29	320 00	30 00
Export Steers	30	100 00	.....
Dressed Carcasses	17	200 00	.....
Grand Championship	.....	25 00	.....
Total	209	$1,586 00	$605 00
Dairy Cattle.			
Shorthorns	1	$135 00	$45 00
Ayrshires	10	135 00	*226 00
Holsteins	26	135 00	**450 00
Jerseys	6	135 00	.....
Guernseys	.....	135 00	.....
Grades	5	135 00	.....
Grand Championship	.....	30 00	.....
Total	48	$840 00	$721 00

* Includes $150 conditional prizes. ** Includes $75 conditional prizes.

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW: The following statement shows the number of animals entered in the Beef Cattle and Dairy Cattle Departments at the Eastern Ontario Live Stock and Poultry Show at Ottawa, 1911; also the prizes offered in the different sections and the prizes paid:

Beef Cattle.	No. of Animals.	Prizes Offered, not including specials.	Special Prizes Offered.
Shorthorns	14	$315 00	
Herefords and Aberdeen-Angus	9	75 00	
Galloways and Devons	2	100 00	
Grades	28	430 00	$50 00
Export Steers	15	180 00	
Dressed Carcasses	7	85 00	
Total	75	$1,185 00	$50 00
Dairy Cattle.			
Ayrshires	18	$215 00	$150 00
Holsteins	19	315 00	85 00
Shorthorns	4	165 00	50 00
Jerseys and Guernseys	14	165 00	
Grades	10	165 00	
Total	65	$1,025 00	$285 00

The following statement shows the number of memberships received through affiliated Associations:

Canadian Ayrshire Breeders' Association	152
Holstein-Friesian Association of Canada	200
Aberdeen-Angus Breeders' Society of Canada	16
Canadian Galloway Breeders' Association	10
Canadian Hereford Breeders' Association	57
General membership	48
	483

FINANCIAL STATEMENT.

For the year ending December 31st, 1910.

Receipts.

Cash on hand as per last Report	$381 79
Memberships, General	49 00
Memberships, Holstein-Friesian Association, 1910	100 00
Memberships, Canadian Ayrshire Association, 1910	76 00
Memberships, Galloway Breeders' Association, 1909 and 1910	10 00
Memberships, Aberdeen-Angus Association, 1910	8 00
	$624 79

Expenditures.

Printing notices for Annual Meeting, 1910	6 10
Cash on hand	618 69
	$624 79

Examined and found correct this 30th day of January, 1911.

(Signed) W. G. LINDSEY, *Auditor.*

(Signed) JOHN GARDHOUSE, *President.*
(Signed) A. P. WESTERVELT, *Treasurer.*

The Report was adopted on motion of JOHN GARDHOUSE and JOHN BRIGHT.

An interesting discussion took place upon the various points referred to in the officers' report.

Prof. DAY, in his remarks, suggested that district representatives might furnish information regarding the supply of animals in the province, and that each district might form a club for organization for co-operative selling.

Moved by Prof. DAY, seconded by A. W. SMITH, "That the Secretary be instructed to cast a ballot electing directors to this Association those who were nominated by the various breed associations." Carried.

OFFICERS AND DIRECTORS FOR 1911.

President ..... JOHN GARDHOUSE, Highfield.
Vice-President ..... W. W. Ballantyne, Stratford.
Secretary-Treasurer ..... A. P. WESTERVELT, Toronto.

DIRECTORS.

Aberdeen-Angus..... JAS. BOWMAN, Guelph.
JAS. COKE, Erin.
Holstein-Friesians..... D. C. FLATT, Millgrove.
A. E. HULET, Norwich.
Galloways..... ROBERT SHAW, Brantford.
D. MCCRAE, Guelph.
Ayrshires..... W. W. BALLANTYNE, Stratford.
W. F. STEPHEN, Huntingdon, Que.
Herefords..... R. J. MACKIE, Oshawa.
H. D. SMITH, Hamilton.
Shorthorns..... JOHN ISAAC, Markham.
JOHN BRIGHT, Myrtle Station.
General Director..... JOHN GARDHOUSE, Highfield.
Director from O. A. College..... Prof. G. E. DAY, Guelph.
Auditor..... W. G. LINDSEY, Toronto.

REPRESENTATIVES TO FAIR BOARDS.

Canadian National Exhibition, 1912: JOHN GARDHOUSE, Highfield.
Western Fair, 1912: A. W. SMITH, Maple Lodge; J. E. MEYERS, Guelph.
Central Canada Exhibition: W. A. WALLACE, Kars; R. NESS, Howick, Que.
Ontario Provincial Winter Fair: JOHN GARDHOUSE, Highfield; JNO. BRIGHT, Myrtle Station; W. W. BALLANTYNE, Stratford; R. S. STEVENSON, Ancaster.
Eastern Ontario Live Stock and Poultry Show: The PRESIDENT; PETER WHITE, Pembroke; J. H. GRISDALE, Ottawa; W. F. STEPHEN, Huntingdon, Que.

Dominion Sheep Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Sheep Breeders' Association was held in the Temple Building, Toronto, on Friday, February 10th, 1911, at 9.30 a.m.

The President, ANDREW WHITELAW, occupied the Chair.

The minutes of the last meeting were accepted as read and adopted.

PRESIDENT'S ADDRESS.

As President of the Dominion Sheep Breeder's Association, it gives me much pleasure to notice the good attendance at this, our annual meeting. It shows, I think, that there is still considerable life in our association, notwithstanding the fact that business has not been so brisk as most of us would have liked. When we met here a year ago we were all congratulating each other upon the fact that those troublesome quarantine regulations that had existed for some time previous between the United States and Canada had been removed. We were all looking forward with hope to 1910, feeling that it would be a very prosperous year for the sheep-breeders of this Dominion. But, I am sorry to say, however, that owing to circumstances over which we, as sheep breeders, have had no control, our expectations have hardly been realised, especially the expectations of those amongst us who in the past have catered almost entirely to the trade with our neighbors across the line. But, although that particular trade has not been so brisk as we would have liked it, still, I feel sure that the dullness in trade that has existed for some little time back and is existing just at the present time is only temporary, and it is altogether likely that by the time we meet at our next annual meeting it will have entirely disappeared. If

the trade with our neighbors has not been what we expected it would be, it is certainly very consoling to know that the home trade has been very satisfactory. There is a steady and growing demand for sheep in most of the Provinces in our Dominion, especially in Quebec and the Provinces down by the sea, and, in regard to our Great North West, I firmly believe that it is only a question of time, and a short time at that, when that Great West will be the most profitable market for the sheep we have to dispose of. I suppose you are all aware that last fall there were two car-loads of sheep purchased from amongst the leading breeders of Ontario quite a number being secured at Toronto Exhibition from amongst the show sheep there and taken down to the Province of Quebec and there sold by auction at two different points in the Province. In a letter which I received from Professor Arkell shortly after the sales were held he informed me that the result had been very satisfactory, and intimated that these sales would in all probability become annual events. He also said in that letter that the breeders up here in Ontario must not imagine that anything was good enough for Quebec, for the breeders down there knew good sheep when they saw them and were prepared and willing to pay good prices for good animals. To prove that what Mr. Arkell said is correct, I will just mention one instance. There was one ram sold there that was shown in a very strong class at Toronto, and although he was not considered good enough by the Judge to get in the money, still he was no disgrace to the ones that did as he stood alongside of them in the ring. He was a large sheep, well-woolled, typical of the breed he represented and nicely fitted; that sheep brought the good figure of $90 at the sale held in the City of Quebec. It becomes us as breeders here in Ontario (which is certainly the breeding ground for the other Provinces of the Dominion) to see to it that we raise only the best, or, rather, that we offer for sale for breeding purposes only the best, let us see to it that we offer for sale no animal, especially of the male sex, that we would not consider good enough to breed from ourselves. That is the only way in which the sheep of our country can be brought up to a high standard. In conclusion, there is one question I wish to say a few words upon, and that is the proposed new tariff regulations between the United States and Canada. Let me say that, whatever our opinions may be as to how these proposed regulations may work out upon the whole, I think we will all agree that if they are favorably passed upon by both Governments there is one industry that will be very much stimulated, and that is the sheep industry, in which we are all so much interested.

DIRECTORS' REPORT.

The following Report of the Directors was read by the Secretary. After the reading the report was adopted, on motion of Mr. WHITELAW, seconded by Lt.-Col. D. McCRAE: During the past year arrangements were made to publish a volume of the Sheep Records, containing copies of all the pedigrees recorded since the nationalization of the Records. This was to be published in two volumes. Up to the present time over $1,200 has been paid on this account, and there will probably be $150 more to be paid on the printing and binding account of Part 2. The statement for the Record Committee shows owing to the Record Committee for work on registrations during 1910, $525.99. The balance on hand at the present time, as shown by the financial statement is $1,233.33. After the two items mentioned above are paid, it would leave about $500 cash in hand, which will be required for the publication of the volume of pedigrees registered during 1910.

The following is a statement of the monthly receipts on account of sheep at the Record Office. This includes both registrations and memberships:

		Brought forward	$408 61
January	$58 46	July	126 60
February	157 85	August	298 55
March	49 30	September	251 60
April	68 85	October	181 74
May	26 75	November	217 20
June	47 00	December	132 75
Carried forward	$408 61		$1,616 65

The following gives in detail the number of registrations, transfers and memberships received at the Record Office in 1910:

Province.	Registrations.	Transfers.	Duplicate and New Certificate.	Members.
Ontario	986	99	3	67
Manitoba	93	21	.....	9
Saskatchewan	21	16	.....	6
Alberta	158	34	1	10
British Columbia	71	2	.....	6
Quebec	714	134	1	131
New Brunswick	12	1	.....	5
Nova Scotia	2	1	.....	1
Prince Edward Island	26	.....	.....	1
United States	22	1	1	1
	2,105	309	6	237

Statement showing number of each breed of sheep recorded in 1910:

Shropshires	862	Lincolns	78
Leicesters	586	Suffolks	32
Oxford Downs	221	Hampshires	40
Southdowns	23	Dorset Horns	46
Cotswolds	175		

The number of members from each Province in 1910 is as follows:

Ontario	119	British Columbia	8
Quebec	141	Nova Scotia	1
Alberta	15	New Brunswick	5
Manitoba	10	Prince Edward Island	1
Saskatchewan	4		
			304

STATEMENT OF RECORD OFFICE FOR CONDUCTING SHEEP RECORD FOR 1910.

Receipts.

Applied from Government Grant, 1910	$98 49
Balance owing to Record Committee by Association	525 99
	$624 48

Expenditures.

Paid Salaries to December 31st, 1910	$545 14
Paid Refunds to December 31st, 1910	75 94
Paid for audit to December 31st, 1910	3 40
	$624 48

Ontario Provincial Winter Fair.

The following statement shows the number of entries in the classes for sheep at the Winter Fair at Guelph, 1910, together with the prize money offered in each class and the amount paid:

Class.	No. of Entries.	Prizes Offered.	Prizes Paid.
Cotswolds	67	$175 00	$173 00
Lincolns	47	175 00	175 00
Leicesters	60	175 00	175 00
Oxfords	42	175 00	173 00
Shropshires	42	175 00	173 00
Southdowns	35	175 00	173 00
Dorset Horns	30	148 00	148 00
Hampshires and Suffolks	9	130 00	83 00
Grades or Crosses	106	240 00	240 00
	438	$1,568 00	$1,513 00

Eastern Ontario Live Stock and Poultry Show.

The following statement shows the number of entries in the classes for sheep at the Eastern Ontario Live Stock and Poultry Show of 1911, the amount of prize money offered, and the amount paid:

Class.	No. of Entries.	Prizes Offered.	Prizes Paid.
Cotswolds	17	$89 00	$89 00
Lincolns	21	89 00	89 00
Leicesters	21	89 00	86 00
Oxfords	21	89 00	89 00
Shropshires	25	89 00	89 00
Southdowns	20	89 00	86 00
Dorset Horns	10	89 00	64 00
Hampshires and Suffolks	5	74 00	40 00
Grades	49	89 00	89 00
	189	$786 00	$721 00

Western Shipments of Pure-Bred Stock.

(See clause under this heading in the Report of the Dominion Cattle Breeders' Association, page 9.)

FINANCIAL STATEMENT

For the Year Ending December 31st, 1910.

Receipts.

Cash on hand as per last Report	$2,551 07
Memberships	300 00
Memberships, American Shropshire Association	15 00
Registrations	1,364 65
Interest	58 10
Miscellaneous	0 90
	$4,289 72

Expenditures.

Directors' expenses	$70 60
Grants:	
Ontario Sheep Breeders' Association	394 65
Quebec Sheep Breeders' Association	143 77
Alberta Sheep Breeders' Association	69 26
British Columbia Sheep Breeders' Association	37 00
Maritime Sheep Breeders' Association	28 34
Saskatchewan Sheep Breeders' Association	12 72
Manitoba Sheep Breeders' Association	6 95
Expenses, Record Office for 1909	488 65
American Shropshire Association fees	433 40
Printing, General, $3.90; Records, $1,225.00	1,228 90
Travelling expenses of Committee *re* Tariff on Wool	132 65
Rent of hall for Annual Meeting	5 00
Purchase of Sheep Records	4 50
Cash on hand	1,233 33
	$4,289 72

Examined and found correct this 30th day of January, 1911.

(Signed) W. G. LINDSEY, *Auditor.*

(Signed) A. WHITELAW, *President.*
(Signed) A. P. WESTERVELT, *Treasurer.*

Mr. CALDWELL, of Lanark, was present on invitation, and delivered an address which was very much appreciated.

Dr. RUTHERFORD, Live Stock Commissioner, addressed the meeting and outlined the present condition of the sheep industry, which he described as very satisfactory. He stated that the Dominion Department was anxious to encourage farmers to raise more sheep and to put this business on a better basis. He thought it would be well for the Association to appoint a committee to make suggestions to the Dominion Department of Agriculture that would tend to improve and stimulate the sheep business in Canada.

Mr. MILLER, of Ohio, stated that his investigation had led him to the conclusion that there should be a much better feeling and understanding between the wool growers and manufacturers.

Moved by Lt.-Col. D. McCRAE, seconded by Mr. MARTIN, "That a committee be appointed by the President to prepare suggestions to be presented to the Dominion Department of Agriculture." Carried.

Moved by Mr. JACKSON, seconded by Mr. TELFER, "That a vote of thanks be extended to Dr. Rutherford for his presence at the meeting and the assistance he has given to the sheep industry." Carried.

Moved by Lt.-Col. McEWEN, seconded by Mr. TELFER, "That we extend to Mr. Caldwell a vote of thanks for his kindness in coming to Toronto to address this meeting." Carried.

OFFICERS FOR 1911.

President	Lt.-Col. D. McCRAE, Guelph.
Vice-President	J. E. COUSINS, Harriston.
Secretary-Treasurer	A. P. WESTERVELT, Toronto.
Executive Committee	Lt.-Col. D. McCRAE, Guelph.
	J. E. COUSINS, Harriston.
	JOHN CAMPBELL, Woodville.
	JOHN KELLY, Shakespeare.
	A. P. WESTERVELT, Toronto.

DIRECTORS.

Cotswolds.....JOHN RAWLINGS, Forest.
Leicesters.....JAMES SNELL, Clinton.
Lincolns.....L. PARKINSON, Eramosa.
Oxfords.....J. A. CERSWELL, Bondhead.
Shropshires.....W. A. DRYDEN, Brooklin.
Southdowns.....JOHN JACKSON, Abingdon.
Dorsets.....R. H. HARDING, Thorndale.
Hampshires and Suffolks.....JOHN KELLY, Shakespeare.
Ontario Agricultural College.....Prof. G. E. DAY, Guelph.
General Directors.....JOHN CAMPBELL, Woodville.
ANDREW WHITELAW, Guelph.

VICE-PRESIDENTS REPRESENTING THE DIFFERENT PROVINCES.

British Columbia.....A. C. AITKEN, Duncan, B.C.
Alberta.....BRYCE WRIGHT, De Winton, Alta.
Saskatchewan.....PAUL BREDT, Regina, Sask.
Quebec.....H. E. WILLIAMS, Knowlton, Que.
New Brunswick.....T. A. PETERS, Fredericton, N.B.
Nova Scotia.....M. CUMMING, Truro, N.S.
Prince Edward Island.....CEPHUS NUNN, Winsloe Rd., P.E.I.
Auditor.....W. G. LINDSEY, Toronto.

REPRESENTATIVES TO FAIR BOARDS.

Canadian National Exhibition, 1912: W. A. DRYDEN, Brooklin; A. W. SMITH, Maple Lodge.

Western Fair, 1912: LT.-COL. R. MCEWEN, Byron; R. H. HARDING, Thorndale.

Central Canada Exhibition: N. F. WILSON, Cumberland.

Ontario Provincial Winter Fair: A. W. SMITH, Maple Lodge; JOHN JACKSON, Abingdon; LT.-COL. R. MCEWEN, Byron; ROBERT MILLER, Stouffville.

Eastern Ontario Live Stock and Poultry Show: LT.-COL. D. MCCRAE, Guelph; W. A. WALLACE, Kars; R. RICHARDSON, South March; JAMES BRYSON, Brysonville.

Winnipeg Industrial Exhibition: A. D. GAMLEY, Griswold; GEO. ALLISON, Burnbank.

Representatives to Record Board: LT.-COL. D. MCCRAE, Guelph; R. H. HARDING, Thorndale.

The President named the following members as a committee to prepare suggestions for the Dominion Department of Agriculture: The President; the Vice-President; John Campbell, Woodville; Lt.-Col. Robert McEwen, Byron; R. H. Harding, Thorndale; A. W. Smith, Maple Lodge.

Ontario Sheep Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Ontario Sheep Breeders' Association was held in the Temple Building, Toronto, on Friday, February 10th, 1911, at 2.30 p.m.

The President, GEORGE TELFER, occupied the Chair.

Moved by Mr. CAMPBELL, seconded by Mr. SNELL, "That the minutes of the last meeting be accepted as read and adopted." Carried.

The Treasurer presented the financial statement, which was adopted on motion by JAMES SNELL and Lt.-Col. MCEWEN.

Mr. P. M. BREDT addressed the meeting, and asked for the co-operation of the Ontario Sheep Breeders with the management of the coming Dominion Exhibition at Regina.

Moved by Mr. R. H. HARDING, seconded by JOHN JACKSON, "That in view of the fact that the Dominion Exhibition is to be held during this year in Regina, and as there are good prospects for the sheep industry in the West, we, the Ontario Sheep Breeders' Association, donate to that exhibition Silver Medals for the "Best Ram" and for the "Best Ewe" of each of the following breeds: Leicesters, Lincolns, Cotswolds, Oxfords, Shropshires, Southdowns, Dorsets, Hampshires and Suffolks as specials from this Association. We urge a uniform classification, if possible, for the various breeds. The cost of medals not to exceed $150.00." Carried.

PRESIDENT'S ADDRESS.

Another year in the sheep business has come and gone, and what advancement have we made? I believe that the home trade has never been better than in the past year, and the prospects are that increased interest is being taken in sheep. The work of the Association has been about as usual. The Demonstration Stations established have been a great success, and many of them have proved beyond a doubt that the raising of lambs for the market is one of the best means of bringing substantial cash profits to their owners, as well as helping to clean the farm of nearly all the weeds that are common to our farms.

I might make special mention of the station under the management of Mr. W. Creighton, Paris, Ont., who has raised from 10 ewes 16 grand lambs that a few days ago (Feb. 1st) weighed 125 pounds each. He has become an enthusiastic sheep man, and means to go into the business on a larger scale, and from reports I find that most of the other stations are doing well.

One of the most unfortunate items in our business is the low price of lambs at the present time. Is it possible that many of the lambs have been killed and kept in cold storage, and thus the price of prime grain-fed lambs can, and is to a large extent controlled. There should be some way whereby this should be put a stop to, as it is beyond a doubt that meat which has hung for so long is hardly fit for food. There ought to be some way whereby our products could be handled by co-operative system, and it might be this difficulty would be overcome. At the present time there is a possibility of the United States allowing our lambs in free of duty. This, in my opinion, would be a boon to sheep men.

Now, as there is some very important questions to come before you and time is short, I will not take more of your time, but only to thank you for your kindness to me during my term of office, and also for the honour of having been the first President of the Ontario Sheep Breeders.

An address on "Co-operation in the Marketing of Wool" was given by Lt.-Col. D. MCCRAE.

Messrs. JOHN CAMPBELL and Lt.-Col. MCEWEN gave some information regarding the sheep demonstration stations.

Moved by Mr. CAMPBELL, seconded by Mr. SNELL, "That this Association ask the Canadian National Exhibition for a Superintendent for the sheep department, and also that they provide a suitable judging ring with seating for the public." Carried.

Moved by Mr. CAMPBELL, seconded by Mr. SNELL, "That the Winter Fair Board be requested to provide heating, water, and an elevator for the sheep department of the Winter Fair." Carried.

The representatives to Fair Boards were instructed to urge that the various exhibitions pay more attention to home-bred sheep, and the Secretary was also in-

structed to write the Secretaries of Fair Boards with reference to this matter. This was embodied in the following resolution:

Moved by Mr. HARDING, seconded by Mr. KELSEY, "That there is general dissatisfaction among the exhibitors about the sheep classifications at our large exhibitions, and it is requested that the Fair Associations be asked to give more encouragement to exhibitors of American-bred sheep and lambs bred by exhibitors, and with this end in view to add such sections to their prize lists." Carried.

OFFICERS FOR 1911.

President ..... LIEUT.-COL. R. MCEWEN, Byron.
Vice President: ..... J. D. BRIEN, Ridgetown.
Secretary-Treasurer: ..... A. P. WESTERVELT, Toronto.
Executive Committee: ..... LIEUT.COL. R. MCEWEN, Byron.
J. D. BRIEN, Ridgetown,
J. LLOYD-JONES, Burford,
GEO. TELFER, Paris.

DIRECTORS:

Cotswolds ..... J. D. BRIEN, Ridgetown.
Lincolns ..... ERNEST ROBSON, Ilderton.
Leicesters ..... JAMES DOUGLAS, Caledonia.
Shropshires ..... J. LLOYD-JONES, Burford.
Southdowns ..... LT.-COL. R. MCEWEN, Byron.
Dorsets ..... J. ROBERTSON, Milton.
Hampshires and Suffolks. ..... GEO. TELFER, Paris.

General Directors.

D. J. CAMPBELL, Woodville, HERBERT LEE, Highgate.

Auditor:

W. G. LINDSEY ..... Toronto.

REPRESENTATIVES TO FAIR BOARDS:

Western Fair, London, 1912: JAMES SNELL, Clinton; JOHN KELLY, Shakespeare.
Central Canada Exhibition: JOS. UNDERHILL, Claremont.

FINANCIAL STATEMENT

Of the Ontario Sheep Breeders' Association for the year ending December 31st, 1910.

Receipts.

Cash on hand as per last Report	$396 72
Grant, Dominion Sheep Breeders' Association, Profits from Registration ...	394 65
Interest	17 25
	$808 62

Expenditures.

Directors' Expenses	$59 75
Rent of Hall for Annual Meeting	5 00
Printing notices for Annual Meeting	2 30
Cash on hand	741 57
	$808 62

Examined and found correct,
this 30th day of January, 1911.

(Sgd.) W. G. LINDSEY, Auditor.

(Sgd.) GEO. L. TELFER, President.
(Sgd.) A. P. WESTERVELT, Treasurer.

EXPERT JUDGES.

Nominated for 1911, by the Ontario Sheep Breeders' Association.

Cotswolds: S. J. Lyons, Norval; J. P. Fitch, Oriel; Jas. Underhill, Claremont Prof. G. E. Day, Guelph; J. C. Snell, London; John Rawlings, Forest; Wm. Thompson Uxbridge; John Park, Burgessville; Robert Vance, Ida; Angus Thompson, Duart J. D. Brien, Ridgetown; Sam Kennedy, Uxbridge; T. Hardy Shore, Glanworth.

Judges nominated for Toronto: Wm. Thompson, Uxbridge; (Reserve) Angus Thompson, Duart.
Judges nominated for London: J. P. Fitch, Orlel; (Reserve) Prof. G. E. Day. Guelph.
Judge nominated for Chicago: Prof. E. L. Shaw, Washington, D.C.
Judges nominated for Ottawa: T. Hardy Shore, Glanworth; (Reserve) S. J. Lyons Norval.
Judge nominated for Winter Fair: Wm. Douglas, Tuscarora.

Leicesters: R. J. Garbutt, Belleville; Jas. Fennell, Bradford; H. B. Jeffs, Bond Head; A. E. Archer, Warwick; Geo. Whitelaw, Guelph; T. Hardy Shore, Glanworth; Abraham Easton, Appleby; E. Wood, Appleby; Wm. Parkinson, Eramosa; E. Parkinson Eramosa; John Orr, Galt; Wm. McIntosh, Burgoyne; R. Eastwood, Mimico; John Kelly, Shakespeare; Andrew Thompson, Fergus; J. K. Campbell, Palmerston; J. C Snell, London; G. B. Armstrong, Teeswater; John Gibson, Denfield; C. E. Wood, Freeman; J. M. Gardhouse, Weston; Andrew Whitelaw, Guelph; Wm. Whitelaw, Guelph. R. C. Martin, Marysville; A. W. Smith, Maple Lodge; H. G. Arnold, Maidstone; J. W Murphy, Cass City, Mich.; Prof. Curtis, Ames, Ia; Geo. Penhale, Exeter; Prof. G. E Day, Guelph; M. Kennedy, Northwood; D. Lillico, Ayr; Jas. Douglas, Caledonia; Frank Shore, White Oak; John Gardhouse, Highfield; Wm. Beattie, Wilton Grove; A. J. McKay. Ailsa Craig; A. Hastings, Crosshill; J. Hastings, Crosshill; A. Deering, Crosshill; James Snell, Clinton; D. A. Loftus, Phillipston; John Wright, Chesley.

Judges nominated for Toronto: John Orr, Galt; (Reserve) W. B. Armstrong. Teeswater.
Judges nominated for London: H. B. Jeffs, Bond Head; (Reserve) Frank Kelly. Aylmer.
Judges nominated for Chicago: Wm. Douglas, Tuscarora; (Reserve) Jas. Snell. Clinton.
Judges nominated for Winter Fair: Jas. Douglas, Caledonia; (Reserve) John Wright. Chesley.

Lincolns: John Gardhouse, Highfield; Leonard Parkinson, Eramosa; Robt. Robson. Ilderton; J. H. Patrick, Ilderton; E. Parkinson, Eramosa; Herbert Lee, Highgate; Prof. G. E. Day, Guelph; D. Campbell, Strathburn; John T. Gibson, Denfield; Graham Walker, Ilderton; Wm. Oliver, Avonbank; John Mitchell, Glencoe.

Judge nominated for Toronto: J. T. Gibson, Denfield
Judge nominated for London: Herbert Lee, Highgate.
Judge nominated for Ottawa: Leonard Parkinson, Eramosa.
Judge nominated for Winter Fair: John Gardhouse, Highfield.

Oxfords: Prof. G. E. Day, Guelph; Smith Evans, Guelph; Jas. Tolton, Walkerton R. J. Hine, Dutton; Henry Arkell, Arkell; Wm. Dickson, Mildmay; J. H. Jull, Mt Vernon; W. J. Arkell, Teeswater; John E. Cousins, Harriston; Arch. McKenzie. Corwhin; R. E. Birdsall, Birdsalls; J. C. Cooper, Picton; Wm. Newman, Cherry Valley; Wm. Arkell, Teeswater; L. Parkinson, Eramosa; S. C. Ketchen, Bloomburg; W. Lee. Simcoe; Prof. M. Cumming, Truro, N.S.; Walter Elliott, Kelso; J. E. Cerswell, Bond Head; Prof. R. Wade. O.A.C.. Guelph; Jas. Thompson, jr.. Mildmay; A. Stevenson. Atwood.

Judges nominated for Toronto: Prof. H. S. Arkell, Ottawa; (Reserve) Robt. Miller. Stouffville.
Judges nominated for London: J. E. Cousins, Harriston; (Reserve) R. E. Birdsall. Birdsalls.
Judge nominated for Ottawa: Robt. Miller, Stouffville.

Hampshires and Suffolks: R. Gibson, Delaware; Henry Arkell, Arkell; W. H Beattie, Wilton Grove; James Bowman, Guelph; John Kelly, Shakespeare; Geo. L Telfer, Paris; Prof. G. E. Day, Guelph; H. N. Gibson, Delaware; W. H. Arkell, Guelph; W. R. Bowman, Mt. Forest; John Campbell, Woodville; R. J. Stone, Stonington, Ill.; Frank Klienheintz, Madison, Wis.; F. C. Biggs, West Flamboro; L. E. Morgan, Milliken.

Judges nominated for Toronto: H. S. Arkell, Ottawa; (Reserve) Prof. G. E. Day, Guelph.

Judges nominated for London: F. C. Biggs, West Flamboro; (Reserve) John Campbell, Woodville.

SOUTHDOWNS: John Jackson, Abingdon; W. H. Beattie, Wilton Grove; W. H. Gibson, Beaconsfield, Que.; H. N. Gibson, Delaware; Robert Miller, Stouffville; Geo. Telfer, Paris; J. G. Hanmer, Brantford; J. C. Duncan, Orchard Park, N.Y.; Robert McEwen, Byron; H. L. Compton, Monroe, Ohio; James Telfer, Paris; Geo. Allen, Paris; E. E. Martin, Canning; Simon Lemon, Kettleby.

Judges nominated for Toronto: J. H. Leet, Mantua, Ohio; (Reserve) H. L. Compton, Monroe, Ohio.

Judges nominated for London: John Jackson, Abingdon; (Reserve) H. N. Gibson, Delaware.

DORSETS: John Kelly, Shakespeare; Robert Miller, Stouffville; J. M. Gardhouse, Weston; John Campbell, Woodville; J. G. Hanmer, Brantford; Prof. Curtis, Ames, Ia.; E. P. Everett, Mt. Vernon; H. N. Gibson, Delaware; E. O. Denton, Somerset, N.Y.; G. McKerrow, Sussex, Wis.; John Jackson, Abingdon; R. H. Harding, Thorndale; G. L. Telfer, Paris.

Judges nominated for Toronto: John Campbell, Woodville; (Reserve) John Jackson, Abingdon.

Judges nominated for London: J. G. Hanmer, Brantford; (Reserve) G. L. Telfer, Paris.

SHROPSHIRES: W. H. Beattie, Wilton Grove; R. Miller, Stouffville; J. G. Hanmer, Brantford; J. Campbell, Woodville; D. G. Hanmer, Burford; D. J. Campbell, Woodville; H. N. Gibson, Millbrook, N.Y.; Geo. Hindmarsh, Ailsa Craig; C. W. Gurney, Paris; J. Miller, Brougham; H. Hanmer, Burford; J. C. Duncan, Orchard Park, N. Y.; Prof. G. E. Day, Guelph; A. Shields, Caistorville; Geo. Crawford, Minesing; J. Lloyd-Jones, Burford; W. D. Monkman, Bond Head; W. A. Dryden, Brooklin; John R. Kelsey, Woodville; Jno. B. Cowieson, Queensville; Thos. M. Blackburn, Kettleby.

Judges nominated for Toronto: J. C. Duncan, Orchard Park, N.Y.; (Reserve) Geo. Hindmarsh, Ailsa Craig.

Judges nominated for London: A. Shields, Caistorville; (Reserve) W. D. Monkman, Bond Head.

Judges nominated for Ottawa: W. Simenton, Stony Creek; (Reserve) Geo. Hindmarsh, Ailsa Craig.

Judges nominated for Winter Fair: Frank Kleinheintz, Madison, Wis.; (Reserve) H. N. Gibson, Delaware.

Short-Woolled Grades: H. N. Gibson, Delaware; (Reserve) Frank Kleinheintz, Madison, Wis.

Dominion Swine Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Swine Breeders' Association was held in the Temple Building, Toronto, Wednesday, February 8th, 1911, at 2 p.m.

The President, WM. JONES, occupied the Chair.

The minutes of the last meeting were accepted as read and adopted.

DIRECTORS' REPORT.

The Secretary read the following report of the Directors:

Your Directors are glad to report a very considerable increase in the number of registrations for the past year. The number of registrations are practically double the number for the two previous years. The number of registrations for the different breeds of swine for the past three years is as follows:

	Vol. 19. 1908.	Vol. 20. 1909.	Vol. 21. 1910.
Yorkshires	2,126	1,775	3,255
Berkshires	1,475	1,214	3,008
Chester Whites	421	607	914
Tamworths	317	355	446
Poland Chinas	43	61	152
Duroc Jerseys	23	44	90
Essex	30	5	11
Hampshires	.....	.....	176
	4,435	4,061	8,047

The Statement of Registrations according to the Provinces is as follows:

Province.	Registrations.	Transfers.	Duplicate and New Certificates.	Members Paid at Ottawa.
Ontario	3,576	245	13	$352 00
Manitoba	779	63	5	128 00
Saskatchewan	383	43	1	88 00
Alberta	448	50	5	76 00
British Columbia	157	24	.....	32 00
Quebec	1,426	83	4	186 00
New Brunswick	172	7	.....	26 00
Nova Scotia	80	7	.....	16 00
Prince Edward Island	128	10	2	22 00
United States	1,056	5	.....	6 00

The monthly receipts on account of the Swine Records at Ottawa were as follows:

January	$370 05	Brought forward	$2,166 35
February	338 00	July	499 00
March	283 50	August	549 80
April	343 15	September	497 15
May	376 95	October	507 50
June	454 70	November	482 95
		December	1,013 90
Carried forward	$2,166 35		$5,716 65

RECEIPTS AND EXPENDITURES FOR CONDUCTING SWINE RECORDS, 1910.

Receipts.

Received from Association to pay salaries, 1910	$1,200 00
Applied from Government Grant, 1910	342 57
Balance owing to Record Committee by Association	114 80
	$1,657 37

Expenditures.

Paid salaries to December 31st, 1910	1,590 23
Paid refunds to December 31st, 1910	55 04
Paid for audit to December 31st, 1910	12 10
	$1,657 37

During the past year the following amounts have been paid to the Associations in the different Provinces, in accordance with the last report. This takes in the profits from registrations for the year 1909, and the memberships for the last three months of

1909. There has already been refunded to these associations, with the exception of Ontario, memberships for the first nine months of 1910. In the case of Ontario the amount given below includes the whole of the memberships for 1909, and no amount for 1910 has been paid over for Ontario members:

Ontario	$512 13	British Columbia	8 25
Manitoba	34 09	Quebec	77 21
Alberta	24 51	Maritime Provinces	24 12
Saskatchewan	21 85		
			$702 16

It is suggested that $1,650 should be divided among the different Provinces. This is the profits from registrations for 1910, after providing $1,500 for the printing of the Record for 1910, and leaving a balance of about $1,000 on hand. The memberships still to be divided amount to $490, making a total to be divided among the Provincial Associations of $2,140.

Province.	Number of Memberships paid in 1910.	Number of Registrations.	Amount of Memberships.	Amount of 1910 Memberships refunded.	Amount of 1910 Memberships to be Refunded.	Profits from Registrations.	Total Amount to be Refunded.
			$ c.	$ c.	$ c.	$ c.	$ c.
Ontario	218	3,576	436 00	.....	436 00	825 35	1,261 35
Manitoba	64	779	128 00	118 00	10 00	179 79	189 79
Saskatchewan	45	383	90 00	72 00	18 00	88 40	106 40
Alberta	42	448	84 00	78 00	6 00	103 40	109 40
British Columbia	15	157	30 00	30 00	.....	36 24	36 24
Quebec	97	1,426	194 00	176 00	18 00	329 12	347 12
New Brunswick, Nova Scotia, Prince Edward Island	31	380	62 00	58 00	2 00	87 70	89 70

In addition to these amounts there is $178.24 of the Ontario surplus unexpended, made up of the Ontario surplus of 1909, $193.04, less $14.80, which was spent in 1910. This makes the total amount available for Ontario $1,439.59.

It is recommended that out of the profits for Ontario for 1910, amounting to $1,261.35, the following should be paid:

1. To the Ontario Large Yorkshire Swine Breeders' Society, the profits from Yorkshire registrations, amounting to $510.20.

2. To the Ontario Berkshire Society, the profits from Berkshire registrations, amounting to $470.75.

From the balance of the profits from Ontario, $280.40, and the Ontario surplus, $178.24, making a total of $458.64, there should be paid in grants to Fair Associations as follows, on condition that the prizes for swine given by these exhibitions in 1911 should be at least as large as in 1910:

Provincial Winter Fair	$50 00
Canadian National Exhibition	75 00
Eastern Ontario Live Stock and Poultry Show	50 00
Central Canada Exhibition	50 00
Western Fair, London	50 00

This money will be given with the understanding that the prizes for Yorkshire and Berkshire classes at these shows should not be increased out of these grants. This will still leave an Ontario surplus of $183.64.

Western Shipment of Pure-Bred Live Stock.

(See clause under this heading in the Report of the Dominion Cattle Breeders' Association, page 9.)

Ontario Provincial Winter Fair: The following statement shows the number of entries in the classes for swine at the Winter Fair, Guelph, 1910, together with the prize money offered in each class and the amount paid:

Breed.	No. of Entries.	Prizes Offered.	Prizes Paid.
Yorkshires	67	$234 00	$204 00
Berkshires	71	136 00	136 00
Tamworths	31	120 00	120 00
Chester Whites	19	106 00	106 00
Grades or Crosses	58	104 00	104 00
Bacon Hogs	92	560 00	560 00
	338	$1,260 00	$1,230 00

Eastern Ontario Live Stock and Poultry Show: The following statement shows the number of entries in the classes for swine at the Eastern Ontario Live Stock and Poultry Show of 1911, the amount of prize money offered and the amount paid:

Class.	No. of Entries.	Prizes Offered.	Prizes Paid.
Yorkshires	36	$113 00	$113 00
Berkshires	18	84 00	72 00
Tamworths	14	80 00	74 00
Grades	36	80 00	80 00
Bacon Hogs	50	370 00	370 00
	154	$727 00	$709 00

Financial Statement of the Dominion Swine Breeders' Association
For the year ending December 31st, 1910.

Receipts.

Cash on hand as per last report	$1,393 12
Memberships	1,018 00
Registrations	4,784 65
Record Office, balance due on expenses of 1909	303 66
Interest	34 97
Swine Record sold	1 00
	$7,535 40

Expenditures.

Directors' expenses	$73 10
Grants, Ontario:	
Canadian National Exhibition, 1910	50 00
Eastern Ontario Live Stock and Poultry Show	50 00
Central Canada Exhibition, 1910	25 00
Western Fair, 1910	25 00
Ontario Yorkshire Society	223 85
Ontario Berkshire Society	153 08
Manitoba Swine Breeders' Association	152 09
Quebec Swine Breeders' Association	253 21
Alberta Swine Breeders' Association	102 51
Saskatchewan Swine Breeders' Association	93 85
Maritime Swine Breeders' Association	82 12
British Columbia Swine Breeders' Association	38 25
Record Office, for salaries, 1910	1,200 00
Printing	219 90
Rent of hall for Annual Meeting, 1910	5 00
Purchase of Swine Records	7 50
Cash on hand	4,780 94
	$7,535 40

Examined and found correct this 30th day of January, 1911.
(Signed) W. G. Lindsey, *Auditor.*

(Signed) Wm. Jones, *President.*
(Signed) A. P. Westervelt, *Treasurer.*

Moved by Wm. Jones, seconded by D. C. Flatt, "That the report of the Directors be adopted." Carried.

Moved by Mr. Brethour, seconded by Mr. DeCourcy, "That the representatives to this Association to Fair Boards be paid $4 per day and railway fare when attending regularly called Board Meetings." Carried.

The recommendation of the Directors for the adoption of the tabulated form of registration certificate was adopted.

OFFICERS FOR 1911.

President..... Wm. Jones, Zenda.
Vice-President ..... Geo. Douglas, Mitchell.
Secretary-Treasurer..... A. P. Westervelt, Toronto.
Executive Committee..... The President,
The Vice-President,
The Secretary,
J. E. Brethour, Burford.
D. DeCourcy, Bornholm.

Directors.

Berkshires..... S. Dolson, Norval Station.
Yorkshires..... J. E. Brethour, Burford.
Chester Whites..... D. DeCourcy, Bornholm.
Poland Chinas..... W. M. Smith, Scotland.
Tamworths..... A. C. Hallman, Breslau.
Essex..... Jos. Featherston, Streetsville.
Hampshires ..... James O'Neil, Birr.
Ontario Agricultural College..... Prof. G. E. Day, Guelph.
General Director..... John Flatt, Millgrove.
Auditor..... W. G. Lindsey, Toronto.

Representatives to Fair Boards.

Canadian National Exhibition, 1912: D. C. Flatt, Millgrove; S. Dolson, Norval Station.

Western Fair, 1912: Geo. Douglas, Mitchell; H. S. McDiarmid, Fingal.

Central Canada Exhibition: R. O. Morrow, Hilton; R. J. Garbutt, Belleville.

Ontario Provincial Winter Fair: Prof. G. E. Day, Guelph; G. B. Hood, Guelph; Wm. Jones, Zenda; R. H. Harding, Thorndale.

Eastern Ontario Live Stock and Poultry Show: Wm. Jones, Zenda; P. O. Collins, Bowesville; W. A. Wallace, Kars; R. A. Heron, Billing's Bridge.

Moved by Mr. Hastings, seconded by Mr. O'Neil, "That this Association ask its representatives to the Canadian National Exhibition to use their best efforts to secure a class for Hampshires." Carried.

Moved by Mr. Flatt, seconded by Mr. Cox, "That in future it be an understanding that the President hold office only one year." Carried.

After the appointment of Expert Judges the meeting adjourned.

EXPERT JUDGES FOR SWINE, AND JUDGES RECOMMENDED FOR EXHIBITIONS FOR 1911.

Berkshires: John Kelly, Shakespeare; J. J. Wilson, Milton; H. Mason, Scarboro; Adam Thompson, Shakespeare; James Hamilton, Shakespeare; J. C. Smith, Ottawa; X. Plaunt, Northcote; Samuel Dolson, Norval Station; Hugh G. Clark, Georgetown; P. W. Boynton, Dollar; Alex. Smith, Maple Lodge; Peter McEwen, Kertch; John Boyes, Jun., Churchill; J. C. Snell, London; Thos. Teasdale, Weston; Robert Vance, Ida; T. A. Cox, Brantford; E. E. Martin, Canning; H. B. Jeffs, Bond Head; Wm. Linton, Aurora; J. D. Brien, Ridgetown; W. A. Shields, Milton; D. J. Gibson, Bowmanville; S. J. Lyons, Norval; J. L. Clark, Norval; Aiken Dolson, Alloa; Frank Teasdale, Concord; J. Weir, Northfield Centre; J. Lawrence Oxford Centre; Wm. Coats, Malton; H. Koelln, Glen Allan; S. Lemon, Kettleby; W. W. Brownridge, Oak Grove; H. Vanderlip, Cainsville; Ben Patch, Georgetown; J. S. Cowan, Donegal; G. B. Wright, Wheatley.

Judges nominated for Toronto: H. G. Clark, Georgetown; (Reserve) P. J. McEwen, Kertch. Bacon Hogs: P. J. McEwen, Kertch.

Judges nominated for London: J. D. Brien, Ridgetown; (Reserve) H. B. Jeffs, Bond Head.

Judges nominated for Ottawa: S. J. Lyons, Norval; (Reserve) J. S. Cowan, Donegal.

Judges nominated for Ontario Provincial Winter Fair, Guelph: S. Dolson, Norval Station; (Reserve) T. A. Cox, Brantford. Bacon Hogs: Thos. Teasdale, Weston.

Judges nominated for Regina: H. G. Clark, Georgetown; (Reserve) E. E. Martin, Canning.

YORKSHIRES AND TAMWORTHS: David Barr, Jr., Renfrew; E. A. Kipp, Chilliwack, B.C.; James Bray, Longburn, Man.; Lou Rogers, Weston; Geo. D. Betsner, Copetown; R. J. Kerr, Mimosa; J. E. Brethour, Burford; W. R. Bowman, Mount Forest; Wm. Jones, Zenda; R. J. Garbutt, Belleville; R. H. Harding, Thorndale; N. M. Blain, St. George; J. H. Simonton, Chatham; G. North, Marden, A. Elliott, Galt; L. F. Master, Haysville; A. C. Hallman, Breslau; D. G. Hanmer, Burford; A. Laurie, Wolverton; Wm. Davies, Toronto; Richard Gibson, Delaware; H. Dedels, Kossuth; G. B. Hood, Guelph; F. Shore, White Oak; Jos. Featherston, Streetsville; H. E. Sharp, Ida; J. M. Hurley, Belleville; Geo. Grier, Grand Valley; Jos. Stephen, Trout River, Que.; Jos. Fletcher, Oxford Mills; Robert Nichol, Brussels; A. F. Foreman, Collingwood; Wm. Howe, North Bruce; Prof. G. E. Day, Guelph; H. J. Davis, Woodstock; D. C. Flatt, Millgrove; W. R. McDonald, Ridgetown; W. Elliott, Galt; R. G. Martin, Marysville; J. E. Cousins, Harriston; J. W. Callbeck, Augustine Cove, P.E.I.; J. G. Clark, Ottawa; J. C. Smith, Ottawa; D. Drummond, Ottawa; A. Carey, Millgrove; James Yule, East Selkirk; A. W. Ross, Bromley; J. J. Pearson, Cooksville; R. F. Duck, Port Credit; Duncan Anderson, Rugby; Thos. Hurley, Belleville; J. H. Grisdale, Ottawa; A. A. Colwill, Newcastle; M. Cumming, Truro, N.S.; R. O. Morrow, Hilton; Geo. Douglas, Mitchell; James Douglas, Mitchell; W. A. Trann, Cedar Grove; P. O. Collins, Bowesville; L. Foster, Myrtle; J. G. Foster, Myrtle; J. R. Flatt, Millgrove; J. Duck, Port Credit; Ken Featherston, Streetsville; J. W. Black, Winnipeg, Man.; Herbert German, St. George; N. Wilson, Fergus; C. Currle, Morristown; Gus A. Langelier, Quebec; Richard Birch, Anderson; H. Koelln, Glen Allan; I. A. Snider, Floradale; J. I. Flatt, Millgrove; C. Kettle, Wilsonville.

Judges nominated for Toronto:
Yorkshires.....R. J. Garbutt, Belleville.
J. E. Brethour, Burford.
Tamworths.....A. C. Hallman, Breslau.
(Reserve) A. A. Colwill, Newcastle.
Yorkshire Bacon Hogs.....R. J. Garbutt, Belleville.
J. E. Brethour, Burford.
Tamworth Bacon Hogs.....

We recommend that the Tamworth Judge at Toronto be in conjunction with a Yorkshire and a Berkshire Judge.

Judges nominated for London:
Yorkshires.....G. B. Hood, Guelph.
(Reserve) A. C. Hallman, Breslau.
Tamworths.....Wm. Elliott, Galt.

Judges nominated for Ottawa:
Yorkshires.....D. C. Flatt, Millgrove.
(Reserve) R. J. Garbutt, Belleville.
Tamworths.....A. A. Colwill, Newcastle.

Judges nominated for Winter Fair, Ottawa:
Yorkshires.....G. B. Hood, Guelph.
Tamworths.....R. O. Morrow, Hilton.
Bacon Hogs.....G. B. Hood, Guelph.

Judges nominated for Winter Fair, Guelph:
Yorkshires.....Prof. G. E. Day, Guelph.
(Consulting Judge) D. C. Flatt, Millgrove.
Tamworths.....Prof. G. E. Day, Guelph.
Yorkshire Bacon Hogs.....D. C. Flatt, Millgrove.
(Reserve) R. J. Garbutt, Belleville.
Tamworth Bacon Hogs.....J. C. Nichol, Hubrey.
Dressed Carcasses.....Wm. Jones, Zenda.
Grades and Crosses.....G. B. Hood, Guelph.

Judges nominated for Regina:

Yorkshires ..... G. B. Hood, Guelph.
Tamworths ..... George Douglas, Mitchell.

Hampshires.....

Judge nominated for Toronto: George Douglas, Mitchell.
Judge nominated for London: J. C. Nichol, Hubrey.

Chester Whites, Poland Chinas and Duroc Jerseys

E .D. George, Putnam.
R. E. Birdsall, Birdsalls.
Albert Barachy, Bloomington.
William Jones, Zenda.
J. C. Snell, London.
D. DeCourcy, Bornholm.
R. H. Harding, Thorndale.
G. B. Hood, Guelph.
Gideon Snyder, Jarvis.
Joseph Featherston, Streetsville.
G. Bennett, Charing Cross.
J. C. Nichol, Hubrey.
Prof. G. E. Day, Guelph.
W. E. Wright, Glanworth.
George Douglas, Mitchell.
J. C. Smith, Hintonburg.
R. J. Garbutt, Belleville.

Judges nominated for London: G. B. Hood, Guelph.
(Reserve) Joseph Featherston, Streetsville
Judges nominated for Toronto: R. J. Garbutt, Belleville.
(Reserve) William Jones, Zenda.
Judge nominated for Ottawa: A. A. Colwill, Newcastle.
Judge nominated for Guelph: G. B. Hood, Guelph.

Ontario Large Yorkshire Swine Breeders' Society.

ANNUAL MEETING.

The annual meeting of the Ontario Large Yorkshire Swine Breeders' Society was held in the Walker House, Toronto, on Wednesday, February 8th, 1911, at 9.30 a.m.

The President, J. E. Brethour, occupied the Chair.

The minutes of the last meeting were read and approved of.

The financial statement was read and adopted.

Moved by Mr. Garbutt, seconded by Major Hood, "That the following grants be made to exhibitions (on the condition that the prizes and classifications be maintained as last year)." Carried.

Canadian National Exhibition	$125 00
Ontario Provincial Winter Fair	125 00
Central Canada Exhibition	50 00
Eastern Ontario Live Stock and Poultry Show	50 00

OFFICERS FOR 1911.

President ..... J. E. Brethour, Burford.
Vice-President..... Joseph Featherston, Streetsville.
Secretary-Treasurer ..... A. P. Westervelt, Toronto.
Executive Committee..... The President; William Jones, Zenda.
John Flatt, Millgrove.

Directors—J. E. Brethour, Burford; William Jones, Zenda; John Flatt, Millgrove; H. J. Davis, Woodstock; Joseph Featherston, Streetsville; G. B. Hood, Guelph; R. J. Garbutt, Belleville.

Auditor—W. G. Lindsey, Toronto.

Ontario Berkshire Breeders' Society.

ANNUAL MEETING.

The annual meeting of the Ontario Berkshire Breeders' Society was held at the Walker House, Toronto, Wednesday, February 8th, 1911, at 11 a.m.

In the absence of the President, the Vice-President, Mr. E. E. MARTIN, occupied the Chair.

The minutes of the last meetings were read and approved of.

The report of the Treasurer was read and adopted.

The SECRETARY stated the reason why the annual meeting was not held during the time of the Canadian National Exhibition, and gave an explanation with reference to the grants.

Moved by Mr. T. A. COX, seconded by Mr. J. KELLY, "That the following grants be made to exhibitions for 1911, on condition that the amount of prizes for Berkshires at the different shows should be at least as large as last year" Carried.

Canadian National Exhibition	$100 00
Ontario Provincial Winter Fair	100 00
Eastern Ontario Live Stock and Poultry Show, 1912	50 00
Western Fair, London	50 00
Central Canada Exhibition	50 00

Moved by Mr. MCEWEN, seconded by Mr. VANDERLIP, "That the Canadian National Exhibition be asked to add a section for pigs, 12 months and under 18, as in former years." Carried.

Moved by Mr. COX, seconded by Mr. BRIEN, "That the matter of classification at Fairs be left to the Directors." Carried.

OFFICERS FOR 1911:

President ..... E. E. MARTIN, Canning.
Vice-President ..... THOS. TEASDALE, Weston.
Secretary-Treasurer ..... A. P. WESTERVELT, Toronto.
Executive Committee: ..... THE PRESIDENT.
THOS. TEASDALE, Weston.
JOHN KELLY, Shakespeare.

Directors:

E. E. MARTIN, Canning.
T. A. COX, Brantford.
THOS. TEASDALE, Weston.
W. W. BROWNRIDGE, Ashgrove.
S. DOLSON, Norval Station.
JOHN KELLY, Shakespeare.
P. J. MCEWEN, Kertch.

Auditor ..... W. G. LINDSEY, Toronto.

Western Ontario Poultry Association.

ANNUAL MEETING.

The annual meeting of the Western Ontario Poultry Association was held in the City Hall, Guelph, on Wednesday, December 7th, 1910, at 2 p.m. The President, L. H. BALDWIN, occupied the chair.

The SECRETARY read the minutes of the last annual meeting, which, on motion, were approved of. The financial statement was submitted and adopted.

The PRESIDENT congratulated the members on the splendid increase on both the number of entries and the quality of the exhibits of the live birds at the present show. He stated that he would like to see a larger show of dressed poultry, and expressed appreciation of the exhibits of birds packed in cases ready for market. It was suggested that something be done to discourage exhibitors from doing with their birds things which would disqualify if known to the judge. The Executive Committee of the Winter Fair should endeavour to stop the things that are done to deceive judges and others. The President stated that he thought it would be well to establish a precedent with reference to the election of the President of the Association and have a change at least every other year. It was further requested that he be allowed to retire, and, in doing so, extended grateful thanks to the Association for the support they had given him during his two terms in office.

On behalf of the President and Officers of the Winter Fair, the Vice-President, WM. MCNEIL, thanked the members of the Association for the grand support they had given the Show, especially those who had exhibited and those who had assisted with the Special Prize List. He stated that the Committee was prepared to do all in their power to further the interests of the Poultry Department.

The President submitted the report of the Committee appointed at the last annual meeting to consider the Special Prize List. The recommendation made by this Committee was thoroughly discussed by the members of the Association, after which it was decided not to accept the recommendation of the Committee.

Moved by Mr. TYSON, seconded by Mr. HENDERSON, "That the Winter Fair Board be asked to allow the Poultry Association to retain their membership fees for use as the Association thinks best." Carried.

Moved by Mr. JOHN CROWE, seconded by Mr. MCNEIL, "That the Committee be authorized to prepare an address and secure subscriptions as a testimonial to Mr. S. Butterfield in acknowledgment of his long term of capable service as a judge, which term has closed on account of illness. It was decided to include with Mr. Butterfield's name that of Mr. James Main. The motion was carried unanimously.

Moved by Mr. BOGUE, seconded by Mr. KILEY, "That this meeting express its disapproval of the rule that birds be required to be in the Winter Fair Building by Saturday night, and that the Executive Committee of the Winter Fair be requested to allow the Poultry Exhibitors until Monday night to get their exhibits in the building." Carried.

OFFICERS FOR 1911.

Honorary Presidents ..... Hon. Jas. S. Duff, Toronto.
Hon. Nelson Monteith, Stratford.
L. H. Baldwin, Toronto.
President ..... Richard Oke, London.
1st Vice President ..... W. J. Teale, Guelph.
2nd Vice-President ..... Wm. Barber, Toronto.

Directors.

Jos. Russell, M.P., Toronto.
A. W. Tyson, Guelph.
G. G. Henderson, Hamilton.
T. H. Scott, St. Thomas.
P. L. Grier, Owen Sound.
T. J. Kiley, London.
N. K. Cornwall, Thamesville.
C. H. Wilson, Hawkestone.

Representatives to Canadian National Exhibition: Wm. McNeil, London; Wm. Barber, Toronto.

Representatives to Ontario Provincial Winter Fair: Richard Oke, London; A. W. Tyson, Guelph; Wm. McNeil, London; L. H. Baldwin, Toronto.

Representatives to Western Fair, London: J. H. Saunders, London; R. McCurdy, London.

FINANCIAL STATEMENT.

For the year ending Oct. 31st, 1910.

Receipts.

Members' Fees	$364 00

Expenditures.

Balance due Treasurer as per last report	$13 40
Memberships transferred to Winter Fair	350 60
Directors' Fees and Expenses	18 60
Total	$382 60
Balance due Treasurer	$18 60

Examined and found correct,
this 1st day of December, 1910

W. G. Lindsey, *Auditor.*

L. H. Baldwin, *President.*
A. P. Westervelt, *Treasurer.*

Moved by Mr. Bogue, seconded by Mr. Henderson, "That the delegates to the Canadian National Exhibition be requested to ask that the regular prizes for poultry be increased to: 1st, $3; 2nd, $2; 3rd, $1, with proportionately larger prizes in the larger classes, and that the Secretary of this Association be instructed to advise the Secretary of the Canadian National Exhibition of this resolution." Carried.

The meeting then adjourned.

Eastern Ontario Poultry Association.

ANNUAL MEETING.

The annual meeting of the Eastern Ontario Poultry Association was held in Ottawa, January 19th, 1911. The President, GEO ROBERTSON, occupied the Chair.

Moved by Mr. CARLETON, seconded by Mr. MCKINLEY, "That the minutes of the last meeting be adopted." Carried.

The PRESIDENT: I am pleased to see so many at this meeting, and I am glad to be able to report that we have quite an increase in entries over last year. Every one must admit that our Show this year is the best we have ever held. This is true, not only in point of numbers, but also as to quality. I hope we will have a still greater increase next year. I want to thank the members of the Association who have helped so much to make this show a success.

The following changes in the Prize List were recommended:

That classes be added for Plymouth Rocks A.O.V., Rose Comb Black Minorcas, Silkies, White Booted Bantams, Asiatics in the Selling Class, Black Orpingtons in place of Any Other Variety of Orpingtons.

In the Pigeon Department the following changes were asked for:

That the class for Blue Homers be changed to Blue or Silver, Red Chequered Homers to be in a class of their own, Light and Dark Chequered Homers to be in a separate class, Yellow Magpies to be in one class, Antwerps Any Other Color and Nuns Any Other Color to be cancelled, and that there be classes for Solid Color Homers, Muffed Tumblers Any Other Color, and for Muffed Tumblers Solid Color.

Moved by Mr. BELFORD, seconded by Mr. WELLS, "That the same judges be recommended to the executive for next year as have acted during the present exhibition, and that Mr. Butterfield be added, and that Mr. James Tucker, of Concord, Mich., be requested to act in case Mr. Butterfield cannot attend." Carried.

OFFICERS FOR 1911.

Honorary Presidents	Hon. SYDNEY FISHER, Ottawa.
	Hon. JAS. S. DUFF, Toronto.
	WILLIAM MCNEIL, London.
President	GEO. ROBERTSON, Ottawa.
1st Vice-President	GEO. HIGMAN, Sr., Ottawa.
2nd Vice-President	WM. GARLAND, Ottawa.
Secretary-Treasurer	A. P. WESTERVELT, Toronto.

DIRECTORS:

Dr. J. A. LAMBERTUS, Eganville.
GEO. LAKE Ottawa.
E. C. MCDOUGALL, Fairfield East.
JAS. SNETSINGER, Eamer's Corners.
G. H. A. COLLINS, Ottawa.
HARRY CARLETON, Ottawa.
WM. ARNOLD, Westboro'.

Representatives to the Eastern Ontario Live Stock and Poultry Show: GEO. ROBERTSON, Ottawa; GEO. LAKE, Ottawa; GEO. HIGMAN, Sr., Ottawa; JOHN BELFORD, Ottawa.

Representative to Central Canada Exhibition: A. W. E. HELLYER, Ottawa.

Ontario Provincial Winter Fair.

ANNUAL MEETING.

The annual meeting of the Ontario Provincial Winter Fair was held in the Secretary's office, Parliament Buildings, Toronto, on April 19th, 1911.

There were present Messrs. Bright, McEwen, Day, Hood, A. W. Smith, Jones, Harding, Ballantyne, Stevenson, Wm. Smith, Boag, Pepper, Oke, Tyson, McNeil, Baldwin, Jackson, and the Secretary.

Moved by Mr. McNeil, seconded by Mr. Jones, "That as the minutes of the last meeting have been published in the annual report, they be accepted as read." Carried.

REPORT OF THE EXECUTIVE COMMITTEE.

The Secretary read the following report of the Executive Committee:

Accommodation.—Your Executive is very glad to report the success of the past Show, the entries in all departments being as large as in previous years, and in the cattle and poultry departments larger than ever before. The accommodation in all departments was crowded to its full capacity. The greatest disadvantage, however, was in the stabling of the horses. It was found necessary to stable about forty of the exhibits outside of the building. This caused a good deal of dissatisfaction, and it has been considered by the Executive that, if at all possible, arrangements should be made before the next Show for additional accommodation in this Department.

Immediately following the Exhibition in December, a meeting of the Executive was called for the purpose of discussing with the City Council at Guelph the question of future accommodation. A number of plans were suggested and discussed, but nothing definite was decided upon, although the Executive were of the opinion that it might be the part of wisdom to try to procure some land adjacent to the Market Square and extend the accommodation by erecting an addition on this land rather than to attempt to re-construct the present building. Negotiations are taking place with reference to the extension of the building, but at the present time there is nothing definite to report, and the matter will have to be taken up by Executive for 1911.

Admissions.—At the last annual meeting it was decided to make a new arrangement for the admission of members from the Farmers' Institutes. This rearrangement reduced the number of persons coming in on Farmers' Institute tickets from 6,349 to 1,438. The amount of the gate receipts for 1910 was $3,837.80, while the total amount of gate receipts and receipts from Farmers' Institutes in 1909 was $2,874.95, showing an increase for admissions over 1909 of $962.85. Turnstiles were put in, and following is a record of the turnstiles for each day:

Monday	3,443
Tuesday	7,423
Wednesday	13,107
Thursday	9,965
Friday	2,605
Total	36,543

This includes all exhibitors' and attendants' passes, and complimentary tickets, as well as the regular paid admissions.

At the last annual meeting, also, it was decided to open the Exhibition on Monday instead of Tuesday, as previously. This gave considerably more time for the judging and more opportunity to attend the course of lectures, and while in some cases objection was raised to requiring exhibits to be on hand Saturday, there is no question but that the extension of the time worked out very satisfactorily and was in the interest of the Show generally, as well as distributing the attendance over a greater period of time, which tended to reduce the congestion.

Passenger and Freight Service.—Several complaints have been made regarding the railway accommodation, and the Executive for 1911 should take this matter up with the Railway Companies, with the object of procuring better facilities for the handling of live stock exhibits. In addition to this, there is also the question of passenger transportation. A number of complaints have been received at different times regarding the lack of proper accommodation on the passenger trains. In order to get accurate information on this point, it was decided by the Executive to place men on all trains running into and out of Guelph on Tuesday, Wednesday and Thursday, running between Harrisburg and Guelph, Palmerston and Guelph, Stratford and Guelph, and Toronto and Guelph. It was considered that the railway accommodation was of sufficient importance to the Exhibition to warrant this expense to ascertain whether or not the accommodation should be improved. It was found out that, with the exception of a few trains, the accommodation was quite ample. On some of them, however, for several stations after leaving Guelph on the return trip, or before reaching Guelph on the incoming trains, there was a great lack of accommodation. So far as these particular times are concerned, there should be some special arrangement to have extra trains put on, or additional coaches provided for.

Comparative Statement of the Number of Entries and Prizes Paid at the Ontario Provincial Winter Fair for 1909 and 1910.

	1909.		1910.	
	No. of Entries.	Prizes Paid.	No. of Entries.	Prizes Paid.
Horses	290	$3,243 00	251	$2,890 00
Beef Cattle	131	1,566 00	222	1,931 00
Dairy Cattle	45	618 00	48	984 00
Sheep	461	1,556 00	438	1,533 00
Swine	250	1,300 00	336	1,245 00
Seeds	165*	249 00	148	243 00
	73**	225 00	93	.....
Judging	180	220 00	250	275 00
Fowls	2,588	1,445 50	2,933	1,692 50
Bantams	756	525 00	609	539 50
Turkeys	86	107 50	129	113 25
Geese	143	138 00	147	153 00
Ducks	125	97 50	173	126 00
Pigeons (Old)	468	220 50	368	234 00
Pigeons (Young)	87	34 50	75	32 75
Pet Stock	39	60 25	48	39 50
Utility Fowls	11	10 00	13	9 00
Sale Class	195	68 50	331	65 50
Dressed Poultry	167	256 00	178	268 00

* Open. ** Spec.

In 1910 no entries were required for sweepstakes in the Horse Department, and in 1909 there was an extra class for delivery horses which was put on as a special class, and was not included in the list for 1910. The number of horses on exhibition in 1910 was greater than in 1909.

FINANCES.—It will be noted by the financial statement that the balance on hand is about $900 larger than in the beginning of last year. It is recommended by the Executive that this amount should be used in providing accommodation rather than increasing the prize list.

FINANCIAL STATEMENT

of the Ontario Provincial Winter Fair for the year ending January 31st, 1911.

Receipts.

Balance on hand as per last report		$1,244 88
Legislative grant		9,500 00
Prince of Wales Prize		50 00
Grants to Prize List:		
Canadian Clydesdale Association		1,000 00
Holstein-Fresian Association		435 00
Dominion Shorthorn Breeders' Association		180 00
Canadian Ayrshire Breeders' Association		68 00
Canadian Hereford Breeders' Association		92 00
American Hereford Breeders' Association		100 00
Ontario Large Yorkshire Swine Breeders' Society		125 00
Ontario Berkshire Breeders' Society		25 00
Dominion Swine Breeders Association		25 00
Lambton County Council		50 00
Norfolk County Council		50 00
Ontario County Council		25 00
Wellington County Council		30 00
Gate receipts		3,837 80
Entry fees:		
Horses	$496 00	
Beef cattle	437 00	
Dairy cattle	96 00	
Sheep	329 25	
Swine	252 50	
Seeds	38 25	
Judging competition	125 00	
Poultry	2264 25	
		4,038 25
Balance from Western Poultry Association		385 45
Advertising in Prize List		440 00
Milk sold, Dairy Department		245 32
Birds sold, sales class		267 25
Catalogues sold		175 19
Special prizes, poultry		245 50
Stall fees		186 00
Freight paid for exhibitors and refunded		8 93
Miscellaneous		10 00
		$22,839 57

Expenditures.

Directors' expenses	$428 05
Judges and judges' clerks	955 10
Lectures and public meeting	179 15
Block test	139 70
Dairy test	30 00
Office help	361 01
General help (including Superintendents)	1,676 08

Prizes paid:

Horses	$2,865 00	
Beef cattle	1,931 00	
Dairy cattle	1,009 00	
Sheep	1,533 00	
Swine	1,245 00	
Seeds	241 00	
Judging competition	275 00	
Poultry	3,241 75	
		12,340 75
Police service		25 00
Printing and advertising		1,813 38
Postage and stationery		360 55
Telephone, express, cartage and exchange		76 41
Lighting building		200 86
Heating building		161 04
Straw shavings and Poultry feed		334 47
Milk sold and marketing charges		245 52
Birds sold in sales class		273 25
Fitting Building, (inc. lumber, bunting and decorating)		296 77
Outside stabling for horse exhibits		118 15
Stall fees refunded		39 00
Insurance on Poultry coops		30 00
Music		75 00
Train reports		127 30
Reporting meetings		158 75
Turnstiles		260 00
Freight paid for exhibitors		8 93
Miscellaneous		19 71
		$20,733 93
Balance on hand		$2,106 64

Examined and found correct,
this 18th day of April, 1911.
(Signed) W. R. REEK, *Auditor.*

JOHN BRIGHT,
President.

A. P. WESTERVELT,
Sec.-Treas.

Moved by Mr. BRIGHT, seconded by Mr. MCNEIL, "That the report be adopted." Carried.

OFFICERS AND COMMITTEES FOR 1911.

Honorary President ..... LIEUT.-COL. R. MCEWEN, Byron.
President ..... JOHN BRIGHT, Myrtle Station.
Vice-President ..... WM. MCNEIL, London.
Secretary-Treasurer ..... A. P. WESTERVELT, Toronto.

EXECUTIVE COMMITTEE.

JOHN BRIGHT, Myrtle Station.
WM. MCNEIL, London.
Lieut.-Col. R. MCEWEN, Byron.
W. W. BALLANTYNE, Stratford.
WM. JONES, Zenda.
WM. SMITH, Columbus.
A. P. WESTERVELT, Toronto.

COMMITTEE ON HORSES.

WM. SMITH, Columbus
JOHN A. BOAG, Queensville.
JOHN BRIGHT, Myrtle Station.
GEO. GORMLEY, Unionville.
WM. GRAHAM, Claremont.
JAS. TORRANCE, Markham.
JAS. HENDERSON, Belton.
A. E. MAJOR, Whitevale.
T. H. HASSARD, Markham.
PETER CHRISTIE, Manchester.
R. E. GUNN, Beaverton.
ROBERT GRAHAM, Toronto.
WALTER MILNE, Green River.
JOHN GARDHOUSE, Highfield.
J. M. GARDHOUSE, Weston.
WM. HENDRIE, Hamilton.
ROBERT DAVIES, Toronto.
E. C. H. TISDALE, Beaverton.
Hon. ROBERT BEITH, Bowmanville
GEO. PEPPER, Toronto.
O. B. SHEPPARD, Toronto.
H. M. ROBINSON, Toronto.
W. R. MEAD, Toronto.

COMMITTEE ON CATTLE.

JOHN GARDHOUSE, Highfield.
JOHN BRIGHT, Myrtle Station.
A. W. SMITH, M.P., Maple Lodge
ARTHUR JOHNSTON, Greenwood.
ROBERT MILLER, Stouffville.
JOHN M. TYSON, Guelph.
LIEUT.-COL. R. MCEWEN, Byron.
W. W. BALLANTYNE, Stratford.
R. S. STEVENSON, Ancaster.

COMMITTEE ON SHEEP.

JOHN JACKSON, Abingdon.
JAS. TOLTON, Walkerton.
A. W. SMITH, M.P., Maple Lodge.
ROBERT MILLER, Stouffville.
JAS. MILLAR, Guelph.
LIEUT.-COL. R. MCEWEN, Byron.

COMMITTEE ON SWINE.

WM. JONES, Zenda.
Prof. G. E. DAY, Guelph.
G. B. HOOD, Guelph.
R. H. HARDING, Thorndale.
J. E. BRETHOUR, Burford.
JOHN BARBER, Guelph.

COMMITTEE ON DAIRY.

W. W. BALLANTYNE, Stratford.
Prof. H. H. DEAN, Guelph.
R. S. STEVENSON, Ancaster.
JOHN MCKEE, Norwich.

COMMITTEE ON POULTRY.

WM. MCNEIL, London
A. W. TYSON, Guelph.
W. R. GRAHAM, Guelph.
L. H. BALDWIN, Toronto.
R. OKE, London.
W. J. TEALE, Guelph.
J. H. SAUNDERS, London.

JUDGING COMPETITION COMMITTEE.

Prof. G. E. DAY, Guelph.
A. W. SMITH, M.P., Maple Lodge.
J. E. BRETHOUR, Burford.
JOHN JACKSON, Abingdon
W. W. BALLANTYNE, Stratford.
ROBERT MILLER, Stouffville.
R. W. WADE, Guelph.
R. S. STEVENSON, Ancaster.
DR. J. HUGO REED, Guelph.
C. F. BAILEY, Toronto.
WM. SMITH, Columbus
GEO. PEPPER, Toronto.

COMMITTEE ON SEEDS.

G. A. PUTNAM, Toronto.
Prof. C. A. ZAVITZ, Guelph.
L. H. NEWMAN, Ottawa.
JOHN BARBER, Guelph.
G. B. HOOD, Guelph
T. G. RAYNOR, Ottawa.

RECEPTION COMMITTEE.

GEO. PEPPER, Toronto.
Hon. J. S. DUFF, Toronto.
Hon. NELSON MONTEITH, Stratford.
JOHN BRIGHT, Myrtle Station.
MAYOR THORPE, Guelph.
ARTHUR JOHNSTON, Greenwood.
DR. J. G. RUTHERFORD, Ottawa.
A. W. SMITH, M.P., Maple Lodge.
President G. C. CREELMAN, Guelph.
JOHN NEWSTEAD, Guelph.
A. W. TYSON, Guelph.
Lieut.-Col. R. MCEWEN, Byron.
J. M. DUFF, Guelph.
H. GUTHRIE, M.P., Guelph.
CHAIRMAN RECEPTION COMMITTEE, Guelph.
GUELPH CITY COUNCIL.
President GUELPH BOARD OF TRADE.
J. R. HOWITT, M.P.P., Guelph.

Superintendent of Building .....D. G. HANMER, Burford.
Assistant Superintendent .....J. H. SAUNDERS, London.

The appointment of judges and the arranging of dates for the next Fair were left to the Executive Committee.

Moved by Mr. STEVENSON, seconded by Mr. BALLANTYNE, "That cows of each exhibitor in the dairy test be milked throughout the test in the same order in which they are milked at the beginning of the test." Carried.

The Executive Committee was asked to consider the advisability of adding a rule for the Dairy Department that any cow found to be in an unhealthy condition by the official veterinarian should be excluded from the competition.

Moved by Mr JACKSON, seconded by A. W. SMITH, "That in accordance with the recommendation of the Directors of the Dominion Sheep Breeders' Association, all lambs must be entered and shown in the sections for single animals, and that exhibitors be not required to name the animals competing in the sections for pens." Carried.

The poultry judging is to start at 9 a.m. on the first day of the Fair.

Moved by Mr. MCNEIL, seconded by Mr. BALDWIN, "That the membership fees of the Poultry Association be used for the special prizes in the Poultry Department." After some considerable discussion it was decided to refer this resolution to the Executive Committee.

Moved by Mr. JACKSON, seconded by A. W. SMITH, "That the revision of the prize list be left to the Executive." Carried.

Mr. STEVENSON stated that the Holstein Association requests that a section be added in the Dairy Department for "Heifers under 24 months."

Prof. DAY kindly donated a silver cup to be offered in the Judging Competition for team work by first, second, and third year students of the O. A. C.

The SECRETARY read a petition from the Swine Exhibitors with reference to the classification for swine at the Fair.

Moved by Prof. DAY, seconded by Mr. HARDING, "That the classification for swine be referred to the Executive Committee," Carried .

Moved by Prof. DAY, seconded by Lt.-Col. MCEWEN, "That the Executive Committee consider the advisability of including in the regulations a rule defining the dentition of animals of different ages." Carried.

PUBLIC MEETING.

The public meeting held in the City Hall, Guelph, on Wednesday, December 7th, 1910, in connection with the Ontario Provincial Winter Fair, was very largely attended. The Chairman, Hon. Jas. S. Duff, Ontario Minister of Agriculture, opened the meeting with some appropriate remarks, and then called upon His Worship the Mayor of Guelph.

ADDRESS OF WELCOME.

MAYOR HASTINGS, GUELPH.

I just want to say a few words of welcome on behalf of the citizens of the Royal City. I am sure it is gratifying, while the city has tried to do everything they could to make it comfortable and make it pleasant for you, to hear the kind words of appreciation that the visitors have expressed to the citizens of Guelph. I am sure that the city will appreciate it. I expect this will be my last year as Mayor, and I have no doubt in the future the Council and citizens generally will take the same interest that they have taken in former years. It is only since this Fair has grown to the proportion it has that the citizens have fully realized the

benefit this Fair is to us, it is only since then that the farmers of Ontario and the Dominion have realized the benefit it is to the whole country; and I believe the Fair will go on, and, while we lack the accommodation, the time will come when the citizens of Guelph will see that this accommodation is provided.

As far as hotel accommodation is concerned, the citizens have responded so well this year that to-night at six o'clock we had 548 more beds than we required.

I desire also to thank you on behalf of the city—and I believe not only the thanks of this city are due to them, but they deserve also the thanks of all this farming community—these honorable gentlemen here, Mr. Duff and other Ministers of the Government, and those other gentlemen who are interested in keeping up the different Associations. I believe that this Province is indebted to these men for the education they have received and for the time and work they have devoted to this object, which is of benefit to the Province. I again extend to you a hearty welcome from the Royal City.

REPLY TO ADDRESS OF WELCOME.

JOHN BRIGHT, PRESIDENT ONTARIO PROVINCIAL WINTER FAIR, MYRTLE.

On behalf of the Officers and Directors, exhibitors and visitors to the Provincial Winter Fair, I most heartily thank the Mayor and Mr. Howitt, as representing the Royal City of Guelph and the County of Wellington, for the kind reception that has been given us.

Away back ten or eleven years ago, when this Provincial Show was wandering around from town to town and city to city without a home, the officers became very much dissatisfied and felt that it would be very much better for the interests of the Institution if they could get settled in one place, which they could make their home. At that time, among all the cities of the great Province of Ontario, the Royal City of Guelph was the only place whose people came with their arms wide open and said "Come," and they put their hands in their pockets and said, "We will help along with this great work." That was started some ten years ago. It worked along certain lines until about two years ago, when the Horse department was added. The horsemen had been feeling for years, after this great Show had established itself in the Royal City, that the horse interests had been neglected; that they should be considered at this Show, and that there should be, along with the other lines of stock, an exhibit of horses, and no wonder, taking into consideration the success this Show has made from its establishment in this city. The Horse Breeders' Show had been moving around from place to place, and felt itself in the same position exactly as did this Winter Show before permanent quarters were secured. While it is true that all the shows of the Horse Breeders' Association were held in Toronto or Toronto Junction, yet they had no established building, they were moving around; and I want to say this, that it appeared to the Horse Breeders' Association in this great Province that the City of Toronto wasn't anxious to accommodate them. I want to say this, that at every Show we held in the City of Toronto, in the St. Lawrence Market, we felt we had paid dearly for the advantage of holding the Show in that Market. As was mentioned before, the Horse Breeders' Association wished to join with this great Show. It felt that whether the Shows were held in Toronto or Toronto Junction, they should be held together. When the Horse Breeders' Association were looking for a place, what

did they find? We found the people of the Royal City coming with open arms and saying, "We will enlarge the buildings, we will do our share, we want the horse interests connected with this Show." It was the only city in the Province of Ontario that came with such an offer, and two years ago, or nearly so, the people of Guelph came to the Legislature, asking for aid to make extra additions to the building here to accommodate the combined Shows. With the agreement that they would put up the balance of the money, the Province of Ontario responded, and I say this, that there is not a man or woman in the Province of Ontario that I ever heard raise their voice against the grant from the Provincial Legislature, and I don't believe, sir, if it were repeated next year, that there would be a voice against it, and the next year, because we are growing.

Now, Guelph made up the balance and put up that large arena that is a credit to the Province of Ontario, not saying anything about the Royal City of Guelph. We have found ourselves in this position, with that large increase in accommodation, of having to stable nearly one hundred head of horses outside of the buildings. It looked to me to-day as if we would have to restrict some of the visitors before long, in order to be able to go on with our exhibits and our judging in running this great Show. There is no question but what this Show in a few years is going to demand double the capacity. There have been great changes in the Winter Show arranged in the last twelve months. You know how liberal we were to the agriculturists of this Province through the Farmers' Institutes heretofore, but we felt we had to do something; the Government had put up a good deal of money; and I say this unhesitatingly of the Royal City of Guelph that I felt that they have put up their share, and that we should be doing something to get nearer to the point where we would be more self-sustaining than we had been heretofore. We changed the rates or charges to the Farmers' Institutes' members, and instead of giving a member of the Farmers' Institutes a ticket with three admissions per day for the whole Show, we have made it for one day. We knew we had to do something with our accommodation, and we felt it would touch their pocketbooks and it wouldn't grow so fast. What do we find to-day, what did we find on Monday, the first day this Winter Show was held? We find an increase on any first day that the Show had ever been held previously, and we find that there never were as many people before at one time in that building as there has been to-day.

Last night (Tuesday), at half-past eleven, the gallery in the new pavilion was filled and there were as many around the ring as could possibly see the exhibit in the ring; at half-past twelve there were hundreds there and the exhibit still going on, and the exhibit so large, such a large entry of the choicest stuff of the best quality of stock that was ever exhibited, and the largest quantity that was ever held under cover in the Dominion of Canada.

We have heard addresses of welcome from the people of the Royal City of Guelph for a good many years, and we have become used to them. We, who have been here for several years, have felt that it was meant, that we had a royal reception, and, with the assistance we have got financially, there is no question that we need in future worry about the extensions, because when we grow and swell out so that we can't be accommodated in that building, we have a Government in the Province of Ontario, let it be Conservative or let it be Liberal, that cannot shut its eyes to the fact that this Show is one of the greatest helps to agriculture that there is in connection with the Department of Agriculture; and with the further assistance of the Royal City we need not fear but what we are going to have accommodation. Therefore, let us grow as fast as we can.

There is one gentleman whom I miss here, and I have been here for many years, an Irish friend of mine and yours, in the person of Mr. Joseph Downey. I have heard him in his eloquent way from this platform address the Provincial Winter Fair people in an address of welcome. Mr. Downey was, I will say, one of the foremost in the promotion of this Show; he was always ready to help in any way, both in reception and in aiding to enlarge, and also to make arrangements for the visitors to your Royal City when the thousands were coming here.

We have heard a great deal about accommodation in this city for our visitors. I have been here for several years, and I have never found anybody yet who couldn't get inside a house. We have heard a good deal about that, and amongst the Toronto papers particularly, and I will leave it to some of the gentlemen here—and to some of the ladies no doubt, too—that when that great National Show is held in the City of Toronto in the Fall, of which we are all so proud, we never hear the Toronto papers talking about the people walking on the streets, who cannot get accommodation; but I know of it. You never heard anything about the hotels or corridors of those hotels having to be strewn with cots, and the most eminent gentlemen in our Province sleeping in them, but I have seen it. Now I want to say that, as far as the accommodation that has been afforded by the people of the Royal City of Guelph is concerned, it has been second to none of any city in this Province or this Dominion. When there is a large Fair like this Provincial Winter Fair being held, we expect to be crowded up a little more, but I say the accommodation has been as good as I have ever seen it at Toronto when the National Exhibition was being held.

I don't wish to take up more of your time. We have here the President of the Show that stands perhaps second to this great Show, known as the Eastern Ontario Live Stock and Poultry Show. Allow me, before sitting down, to again thank you heartily for the reception you always give to the Provincial Winter Show.

ADDRESS.

By James Mills, LL.D., Dominion Railway Commissioner, Ottawa.

When I left Guelph the one thing above all others for which I was sincerely thankful was the fact that I was done with public speaking. From that time to this, during a period of more than six and a half years, I have delivered only one address; and it is for "Auld Lang Syne" I am here to-night, for the pleasure of looking once more into your honest, manly faces, ye men of the farm, where we find the conditions that are most favorable to the development of physical, mental and moral manhood. I think it is scarcely necessary for me to justify this statement, because nearly everybody knows something of the extent to which business and professional life in our cities is enriched and improved by the physical strength, the mental power, the moral stability, the industrial and economical habits of young men reared in, and drawn from, our farm homes throughout this Province and the other Provinces of the Dominion.

I congratulate you on the marked excellence and paramount importance of your Winter Fair—a great fair, of great, very great educational value. I remember its beginnings; the skilful organizing, the wonderful push, and the effective publicity work of F. W. Hodson; the wise and patiently persistent efforts of the Guelph Fat Stock Club; the enterprise and liberality of the City of Guelph and

the County of Wellington; and the generous assistance of the Provincial Government, then and since.

I congratulate you most sincerely and heartily on what has been done in this country for the promotion of agriculture and horticulture in the broadest sense, including stock-raising, dairying, poultry raising, fruit-growing, floriculture, bee-keeping, and home-making; and, in this connection, it is proper, it is only fair, that I should mention the name of at least one man. To the Hon. Sir John Carling belongs the credit of doing two of the greatest things ever done by a public man in this country—the founding of a provincial agricultural college in Ontario and the establishment of a number of experimental farms wisely located throughout the Dominion. All honor, triple honor, to Sir John Carling; he nobly earned his knighthood.

First a word about the Province, and then about the Dominion. We have:

No. 1. *The Ontario Agricultural College and Experimental Farm.* The fountain head and source of nearly every organized effort that has been made in the last thirty years for the benefit of farmers and farming, not only in the Province of Ontario, but throughout the Dominion of Canada.

No. 2. *The Experimental Union.* To test varieties of crops, methods of soil cultivation, selection of seed, dates of seeding, dates of harvesting, etc., etc., to verify its results by co-operative work throughout the Province; and to create new varieties of crops by the difficult methods of plant breeding.

No. 3. *Macdonald Institute.* For home-making, especially to enlighten, brighten and elevate the rural homes of Canada.

No. 4. *Farmers' Institutes.* To carry the benefits of the most practical and helpful sort of education to all kinds and conditions of farmers, young and old, rich and poor, learned and illiterate—to instruct, direct and encourage them in their work all over the Dominion.

No. 5. *Women's Institutes.* To assist the women of our country, especially farmers' wives and daughters, in cooking, sewing, laundry work and general housekeeping, and in making their homes sweeter, more healthful and more attractive than they have been in the past.

No. 6. *Agricultural High Schools.* In every one of which there is a graduate of your Guelph College—a young man who instructs farmers' sons in things pertaining to work and life on the farm, and keeps an office, open at all seasonable hours, for consultation with the farmers of the neighborhood regarding their work—the cultivation of the soil, the destruction of weeds, the selection of seed, the breeding and feeding of animals, and scores of other things that have to be considered in the successful management of a farm.

No. 7. *Travelling Dairies.* Which did such excellent work in improving the quality of butter all over Ontario, and subsequently throughout the whole Dominion.

No. 8. *Dairy Schools.* Which systematically instruct and train men and women in the best methods of making butter and cheese, first in Ontario and then in the other Provinces.

No. 9. *The Poultry Department at the Agricultural College.* To give instructions, with practical demonstrations, in the breeding and feeding of hens, chickens, ducks, geese and turkeys.

No. 10. *Fruit Experimental Stations.* To test varieties of fruit and furnish information as to the kinds and varieties which can, and cannot, be successfully grown in specified localities.

No. 11. *Short Courses at the Agricultural College.* In stock-judging, selection of seed, dairying, and horticulture, with instruction on forestry and bee-keeping; and instruction, with practical demonstrations, throughout the Province in stock-judging, the spraying and pruning of fruit trees, and the draining of farm lands, etc.

No. 12. *Your Magnificent Winter Fairs at Guelph and Ottawa.* With such splendid examples of what can be accomplished by skill, patient industry, and persistent care in the selection, breeding and feeding of animals. (The name of Jas. Leask comes to my mind in this connection.)

All this has been done by the help of a wise, liberal and progressive Provincial Department of Agriculture—good and true Commissioners and Ministers of Agriculture, assisted by our able, judicious and progressive Deputy Minister.

To this must be added the excellent work done by the Dominion Department of Agriculture, with its Experimental Farms and its fine staff of experts, most of them graduates of the Ontario Agricultural College, working hard and always ready to assist in this and other Provinces—rendering valuable veterinary service; and doing what they can to assist in dairying, cold storage, the packing of fruit, and the selection of seed; and to protect the community against foul and adulterated food—all under the direction of the Hon. Sydney Fisher.

Now, I notice that during the five days of the Fair twenty-four addresses on topics relating to horses, cattle, sheep, swine, poultry and seeds were to be given by experts, and the majority of these addresses have already been delivered. Hence, I wonder what is left for us to-night. Scarcely anything. Speaking for myself, I must say that I am at a loss, so I can only aim at emphasizing the importance of a few things which have often been brought to your attention.

I presume most of you are live stock men, and, on that assumption, may I venture to call your attention to a fact that is apparently forgotten by some, namely, that with the raising of live stock must always go the cultivation of the soil and the growing of crops. Hence the importance of at least three things:

1st. Thorough *cultivation,* including shallow, early after-harvest cultivation—to clean the soil and keep it clean.

2nd. The growing of *red clover* and plowing down the sod after the first crop of hay, followed by a summer's pasture, or, after the first crop of hay, followed the same summer by a crop of seed—one or the other—to enrich the soil and keep it in good heart.

3rd. Great care in the selection of *Seed,* so as never to sow anything but what is pure and good, free of weed seeds, and having first-class germinating power.

It is very easy to give advice. Mark Twain said: "To be good is noble; but to tell and show other people how to be good is nobler and much easier." May I, therefore, call your attention to the importance of four or five other things:

1. Selection in the breeding of animals.
2. Clean, well-ventilated stables.
3. Regularity in feeding and watering animals.
4. Testing of cows kept chiefly for the production of milk.
5. Care of orchards.

In conclusion, let me take you into my confidence and ask you, say, three questions:

Can any of you give me a good reason,

1st. Why any farmer in Ontario should have tumble-down fences on his farm, or piles of stones in his fields?

2nd. Why any farmer in Ontario should have a bare, cheerless home?

3rd. Why any farmer in the older parts of Ontario should fail to grow on his own farm all or nearly all the fruit required for constant use in his home—for his wife, his children, himself, and those who partake of his hospitality.

I sincerely congratulate our farmers on what they have done in this Province, and my hope is that they may soon come up to the mark in the things which clearly admit of improvement.

ADDRESS.

Hon. W. J. Hanna, Provincial Secretary, Toronto.

When I attempt to talk on a subject that I know nothing about, I prefer to deal with the future, rather than the past or the present; it is so much more difficult of contradiction. In such cases, too, I am always careful of my choice of text; one admitting of very wide interpretation is preferred. You know it is sometimes thought that the text should have some relation to the subject. Sometimes it has, but not always. My text this evening is, "When I Go Farming."

When I go farming, I shall come to my work convinced that there is no trade, profession or calling more honorable than farming, so long as I am doing useful work, but no longer. I am willing that every other trade, profession or calling should be measured by the same test. When I go farming, it will be in full recognition of the fact that it requires lots of brains and experience, and some money to carry on the business. The money I can borrow from the banker by giving him some security and promising him so much per cent. The brains and experience I cannot borrow from the banker. I must get them from my neighbors. But how? This remained unsolved until co-operative associations opened the way. The price of this loan was within my means, simply to join a co-operative association and the treasury of knowledge and experience of its members was open to me if we worked it right. There we could meet together, and could discuss my neighbors' success and my failures. We could ascertain the reason why. We could all know. We could everyone be working up to the standard of the best. In this way I should hope to borrow my neighbors' brains; so that now, with the question of brains and money solved, I am ready to select my farm. I do not know just exactly where I shall select it. I have an idea that it will be somewhere in Lambton County.

Exactly what my line of farming shall be, I have not decided, but I hope to do something in vegetables, something in fruit, something in eggs, something with my old friend, the bacon hog. It will be perhaps what you call "mixed farming"—very much mixed before I am at it long.

Starting with vegetables, you quite understand that I do not know much about growing vegetables, but through our association I am going to find out how, and am going to do it; not only how to grow them, but how to market and get the full benefit. The same with fruit. I know little about pruning, but something about spraying—I belonged to a fire brigade once—but through the co-operative association I am going to do what my fellow-members do. I shall have them come into my orchard, and we will talk bugs and grubs, and fungus and blight, and scale and all the things that they know all about and that I know little about, but we shall go ahead and deal with these pests. We shall not only grow the vegetables and fruit, but shall market them through one who knows how, and market them as ours. The same with eggs. We are going to produce good eggs. We want our eggs gath-

ered twice a week. We are not going to ask that the man who gathers them shall come only to my place for eggs; he must have other eggs to come for, and here come in the egg circles.

Now the thing we must keep in mind constantly is that our co-operative associations are not only for the purpose of growing the superior article, and in quanties, but for marketing them and marketing them as ours. We propose for the superior article to get not only the price for it but the credit of producing it, and to get that credit from the person consuming it. The price is a very good thing for to-day, but the credit is the grand thing for to-morrow, for the future of our trade depends on it. The superior thing we produce must therefore go to the consumer as ours. These vegetables must be packed in our crates, and reach the consumer as our growing; the fruit must be packed in our boxes and reach the consumer as our production; the eggs must be packed in our crates, and go to the consumer as our eggs, and every time that a consumer cracks an egg he must know that it is the Lambton County Association that grew it, that we laid those eggs—because therein, let me emphasize again, lies our whole security for the future. What is it to us that to-day we get an additional five cents a dozen if to-morrow the market we built up is given to someone else. When these egg circles are organized, as they can be in the course of a few weeks or months at most, and we are producing in great quantities, where is the benefit if the very man who is buying our eggs, packing them in his boxes with his name on them, and ignoring us, can next year come into South Wellington, organize his egg circles here and then come back to us in the County of Lambton and tell us to go be hanged, while he goes on selling South Wellington eggs in the market that we made, and his customers—the customers that we made—will never know the difference. We are left with our eggs on our hands and without a market, all because we did not insist on marketing them in our crates. To do these things successfully we must employ and pay for the best skill in marketing, and must command the best skill in organization and conduct of our association, otherwise we cannot succeed. I say this because former attempts have fallen down owing to their failure to recognize that marketing and business methods are things requiring a training and experience that the grower can seldom have.

When it comes to the bacon hogs I find the question not so easy of solution. In planning for the future, when I got my vegetables and fruit and eggs association all worked out, I had half an idea that it was simply a case of applying the same principle to the bacon hogs. I still think so, but suspect it must be on a much larger scale. I tried in my difficulties to look up what has happened elsewhere and was interested in what I found—interested to find that long years ago in a far country a minister of agriculture with his department got busy to encourage the development of the bacon hogs. The great pork packers of that day got busy in the same line. Meetings were held, talks were given, things were said, papers were printed, and the farmer, as he was told of the greatly increased prices, got interested and commenced the production of the bacon hog, growing him to type—high type and plenty of him—and the time came for market. When the farmer came to market the bacon hog he was surprised to find that his neighbor from across the road, who had not given any attention to type, shipped his promiscuous lot of hogs in the same car to the same packer at practically the same prices as were paid for the high type bacon hog, and with better net results to the neighbor. The farmer investigated, and he found that while he was himself growing to "type," and at considerable trouble and expense, his neighbor across the

way was growing to "price." You know that growing to "type" is a fine thing, a grand thing at a county fair, a fine thing at the Guelph Winter Fair, but to feed the folks at home, growing to "price" is better. "Type" and "price" must go together, or "type" fails. And the farmer became discouraged. He was not half so enthusiastic about growing to "type," and came to think more of price, and the high type bacon hog fell off; and about this stage, one of the great packers of that day sat down and wrote a letter—a long letter, a critical letter—in which he blamed the Minister of Agriculture for not making farmers of that country grow to "type." when the truth was he should have put the responsibility nearer home.

I do not want to be too specific about the bacon situation, but I have an idea that with our vegetable association working right, our fruit association working right, our egg association working right, with the very best ability employed in marketing and in organization, including processes and business methods, with our own brand going all the time to the consumer through our own salesman, with these associations having confidence in themselves because of their success, we can come forward with a solution for the bacon situation, and what will that solution be? I suspect it will be the co-operative associations—co-operation in growing the bacon hog, co-operation in packing the bacon hog, co-operation in marketing the bacon hog, whether that market be on this continent or in Europe, the grower getting the full credit throughout, not only in the dollars that come back to him, but in the reputation that he makes with the consumer, and thus having his future market assured. It will require a big association—not dozens, not hundreds, but thousands, and considerable capital—but why not have them if the thing is right?

I may do a little something in the dairy line. You know if you want to appear successful in anything, there is only one way of doing it, and that is to have someone else do the work and you take the credit of it. I work on that principle in my department. It is the only way to do it. In the dairy line let me instance; A herd of cows, between 40 and 50, four years ago averaged less than 5,000 pounds per cow per year. Three years ago a standard of 6,000 pounds per cow was imposed for that herd. The great majority of them had to go out of the herd in consequence of this and the tuberculin test. But a new herd was built up, and that herd during the year ending 31st of October, 1910, averaged 8,600 pounds per cow, with a butter fat test throughout of 3.6. For this present year the standard is 8,000 pounds per cow, and we expect to average over the 9,000 pounds mark; and before three years go by we expect to have a herd of 40 cows, running upwards of 10,000 pounds per cow per annum. I mention this only as illustrating the advantage of what Dr. Mills says as to the daily record of cows. So you see I may do a little something in the dairy line as well "when I go farming."

LECTURES ON PRACTICAL SUBJECTS DELIVERED IN THE LECTURE ROOM IN THE WINTER FAIR BUILDING, GUELPH, 1910

CLOVER SEED PRODUCTION IN ONTARIO.

T. G. Raynor, Dominion Department of Agriculture, Ottawa.

The question I have been given to discuss this afternoon is the question of the production of clover seed. That is a broad question, and in the limited time I have I am afraid I cannot go into details very much; but I shall try to outline my subject in a way that you will be able to enlarge upon it through the discussion.

Permit me before I enter into that to call your attention, those of you who are interested in the good seed movement, to some literature we have up at the end of the seed exhibit. I hold in my hand a copy of the Sixth Annual Report of the Canadian Seed Growers' Association. You will notice along the wall, penned in on two sides, is the exhibit of corn and potatoes and grain in small bags and large bags; all that represents an exhibit of the Canadian Seed Growers' Association. It is well worth looking at. When you see that perhaps you will want to know something more about it. You can get this report, and also a copy of the rules and regulations. Should any of you be interested enough to become members of that Association, there are some cards here that have the explanation and method of conducting this work; you can sign this card and send it to the Secretary-Treasurer of the Canadian Seed Growers' Association, and he will send you all the literature, and that will take the place of making a formal application to undertake this work. Then when next spring comes you can buy registered seed or select from what you have got and start the business along any line you like. In addition we have some copies of the Seed Control Act for distribution, and you can get that. Then here is a copy of the last revised Bulletin on Farm Weeds, issued under the direction of my friend the Seed Commissioner, Mr. Clark; this contains descriptions of a large number of the worst weeds we have, some that you may not have seen. You may have seen the first edition, but this is enlarged and contains twenty more cuts with a short history of all these weeds, and the best up-to-date methods of getting rid of them. This book will cost you a dollar. You can send to the Superintendent of Stationery at the Government Printing Bureau, Ottawa, and they will send you one of these books. This ought to be in nearly every farmer's home, especially where there are children, in the Province of Ontario, because we claim it will give you good up-to-date information. Then up in the seed department there is this case of weed seed, this 100 bottle collection that the seed branch puts up especially for those engaged in the seed trade, at a nominal cost of $2 to cover the cost of the tray, the bottles, and the collecting of the seeds, and you can see the weed seeds there that occur in your seed grain and other small seeds Now, before I venture into my subject I have one more object lesson to give you of one of the commonest noxious weed seed impurities in your clover seed; it is what is called ribgrass or buckhorn. Many farmers growing clover seed have buckhorn in it; they sow their own seed and multiply their troubles and take a less

price for their seed. We have discovered a simple way in which a man can separate nearly every last kernel of that buckhorn or ribgrass from his clover seed. I have got just a cheap outfit here and I want to demonstrate to you something of how it is done. This is just an ordinary fanning mill screen; you can have half a dozen or a dozen of them, and in February or March when it is too cold or stormy to work outside, you can take some of these inside where there is a fire in the kitchen and go through this process. This is just a little cheese-cloth costing five cents a yard, fastened upon the screen. Take a sprinkling can and sprinkle it that way. Your clover seed there contains ribgrass; scatter it around in a thin layer like that. Now this clover seed which I have here did not have any ribgrass in it, but I have got a little here in a bottle. I am sprinkling that around through this clover seed. The idea is when that dries the clover seed will shake off. If it were set alongside the stove, or in the sunshine, or in a little wind, it would dry very rapidly; perhaps in half an hour that will be dry enough, so that all that clover seed will shake off. Don't leave it too long after the clover seed shakes off, take a stick and you can scrape off nearly all the buckhorn, and then go through the process again. If you have a dozen sieves like that, while one is drying you can prepare another one, so that you can keep up the process. I believe a man in a day or a day and a half could put through two bushels and take out every last bit of buckhorn. If you sowed that on a clean piece of land, such as a clean piece of hoe crop ground, with a little after weeding in the field, don't you think you could grow clover seed quite free from this buckhorn? I believe you could.

Now, in connection with this theme I am to bring before you the question of the production of red clover seed, I might say most farmers look upon what they can get from that as a present. Whether you grow it from clover that has been pastured, or whether you mow the first crop of clover and keep the second growth for seed, you have really got the value of the land in the first growth; and then the clover plant, you know, is a most valuable plant in enriching the soil and making it more fertile. I look upon the production of clover seed as a present to any farmer who engages in that business. We haven't any statistics to give us the exact amount of land that is sown with clover every year, but I made a little estimate and I leave it to your own judgment to say whether I am conservative in my ideas or not. I looked up the Bureau of Industries report and I find that there are three and a quarter million acres that are annually seeded with clover and timothy; I thought it would be fair to take one-third of that as being seeded with red clover—perhaps red clover and timothy mixed—and the crop the first year would be the red clover and the seed crop could be produced from the second growth. That, then, would mean that in this Province of Ontario, and you know the clover seed area of the Province of Ontario is confined to a restricted district. If you drew a line across from Kingston up to Georgian Bay you would take in all the clover seed and alsike growing district in the Province of Ontario, and, for that matter, in the Dominion of Canada. I don't mean to say by that that clover seed cannot be produced in other sections, for I believe it is being produced in limited quantities, but this is largely the area from which it is produced. Then we find from trade statistics that 150,000 bushels of clover seed, alsike and red clover, are exported from the Dominion of Canada, practically from Ontario, to foreign countries annually. If that 1,075,000 acres were all kept for clover seed, that would produce something like 2,000,000 bushels of clover seed, at the rate of two bushels to the acre. Perhaps that average is a little high, although some will cut four or five bushels to the acre; sometimes we only get one bushel to the acre; but I have

thought I would be fair in my estimate. I say if all that clover land were brought into the production of clover seed you can see there would be a very large amount of seed produced. If that were multiplied by $7 per bushel you can readily see what the value of that crop would be to the Province of Ontario. But all of that land that is seeded with clover is not turned into the production of clover seed, there is only a certain amount of that; if 150,000 bushels is exported, it is safe to say for our own home use there is an equal amount at least kept for home trade. That would be about 300,000 bushels; and at the rate of two bushels to the acre there is an opportunity of producing a very much larger amount even if a very small amount of that 1,070,000 acres were brought into producing clover seed.

Just one more point. Perhaps a good many of you may not know that the Minister of Agriculture directed the Seed Commissioner, Mr. Clark, last year to select a certain number of men in this Province—I see some who did that work are present here in this meeting—to go out on the side lines and concessions; and no less than 28 of them in 26 counties did this work; they spent 497 days all told at the work; they visited 1899 farms where clover seed was being produced, and they practically inspected in that time 15,996 acres of red clover, 225 of mammoth red, 798 of alsike, and 1,472 acres of alfalfa, and all this the farmers said was being kept for seed purposes. They didn't begin to touch the amount of area that was probably held for clover seed production this year, but that gives you a little idea of the amount of work done in that time. The report summarized says this about the purity of these crops. They reported that 184 farms where they visited were clean, or quite clean; that 1,707 could be made clean by doing some weeding in the field, and that only 112 fields or pieces that they visited they would condemn and say it was useless to keep them for seed purposes. So that the production of red clover seed is not an impossibility in this country to meet the law if the farmers will take the pains.

Now, what are the pains to be taken. In the first place I think every man should aim to use pure, clean seed; the ideal clover seed is the large plump kernel, as plump as we can get, well colored. If it is a large, plump seed it will produce a stronger plant than a weak seed; but don't condemn a clover seed if when you look it over it shows rather a light color, or is not well colored; that means it was cut a little before it was fully matured. So far as its vitality is concerned it is good, and a very large percentage of it will grow and produce strong plants. You ask me, "How am I to know whether my clover seed is pure?" You have no excuse for not finding that out, for the seed branch pledges itself to test all your samples free of charge, and it does not cost you the price of a postage stamp to send it down there for report, and we can give you a reasonably expeditious report. You only need send an ounce and they will estimate the value of the sample, and the report to you should be very valuable. Get a representative sample of the bulk lot you have to sell or sow. Before you take your sample go to the different parts of the pile, or go through the different bags, and then put that in a dish and mix it thoroughly and from that take your sample If you have not got any strong sample bag, put it inside of an ordinary envelope, seal it up, and put that inside of another envelope and it will carry safely through the mail. If you leave it in one envelope it may leak out when carrying through the mail; ordinary envelope paper is not strong enough and it may break, and you would not get a satisfactory report. By sending your samples of seed down that way we will give you a report and tell you just what weed seeds are in them and if they are of a noxious nature. If you want to find out what the plant is like you may have access to this book, called Farm Weeds, which gives cuts of the various weeds in natural colors. Once

you know the plant and know the seed you are skilled every time to determine the quality of your seed. We have been testing a very large number of samples this year for the farmers and giving them information and telling them the nature of the plants and how to handle their crop in the future in order to avoid trouble from weed seeds indicated in their samples. In growing clover seed get good seed, find out whether it is pure, sow it on a clean chance. The best chance to grow pure, clean seed is to take hoe crop ground, and if you are bound to plow it in the fall of the year, which is not always the wisest course, but which in some cases may be, my advice would be to plow it shallow. Why? In the previous plowing, before you have done the work of cleaning your hoe crop, you have probably plowed down a lot of weed seeds that have gone to sleep and they will lie and sleep there until they are brought to the point of germination again. If you have given the surface of your ground, in the cultivation of the crop, a good clean cultivation you have practically killed all the noxious weed life. Why do you want to go down and wake up those sleeping dogs? So I say, if you are bound to plow that hoe crop ground which you are going to seed down, plow it shallow and leave those noxious weed seeds down below the point of germination, while you are growing clover seed at least. When you are ready to put on a hoe crop again, by working that land you can bring these fellows up and let them wake up and kill the little plants by cultivation. I would sow from four to five pounds of red clover seed to the acre according to whether the land was very rich or whether it was very poor, and whether the seed was bold and strong or whether it was weak. If it is weak and the land is poor sow more seed, even 8 lbs per acre may not be too much then. If the land is rich and you have got good seed, a less amount of seed will do in seeding down with the view of producing clover seed. I prefer, if you are drilling the grain in, which you are using as a nurse crop for your clover seed, to let the clover seed fall in front of the drill and give a light stroke of the harrow afterwards. If you are using a cultivator let the grass sower sow the seed behind and give it a light stroke of the harrow; and I would, in every case for seeding down, get as fine a tilth as possible and get a dust blanket over the field to hold the moisture. Even if it is fine seed all of it won't grow if you have got a lot of lumps; clover seed requires a large amount of moisture to swell it. It is said that a large amount of the very best seed will not germinate the first year; it seems to require a rest period; but a large enough amount will germinate if we give it a good fine tilth and it has plenty of moisture. For that reason I would like to seed early—as early in the spring as that land can be prepared well. I have no objection if you want to sow it on fall wheat, sowing it early; that is a very good way; while there is still frost in the ground and it is a little honeycombed the seed will fall down in the honeycombed surface soil. If you leave it later and you want to see whether the fall wheat is going to grow or the rye going to come through, then as early as the ground is sufficiently dry that you can put horses on and cover it with a light stroke of the harrow that will be the best course to pursue.

Alsike growers should have heavy clay soil to get the best results, and they should sow as much as six or even seven pounds to the acre, in order to get a finer plant that will not grow so strong. If you are growing for hay you can pursue a different policy, and I wouldn't put in more than two or four pounds to the acre. I am talking now of sowing alsike for the production of seed for seed purposes, and it invariably does best on heavy soil. We have got our seed, it is pure and it is put in under right conditions. What about the after treatment? If there are any weeds in that field, I appeal to you as practical men if you don't find most of the weeds that contaminate your clover seed crop in the killed out places and in the

thin places when you are harvesting. What is there to hinder any man who is making a business of growing clover seed from going in the field with a scythe before the foxtail, before the mustard, before some other plants ripen their seed, and cutting those, and then sacrifice the thin places for hay? Where the clover is thick, and there is a thistle coming up here or rib grass there you could go through with a spud and cut those out or pull them out, and you will have reasonably clean seed, for I have yet to find where clover seed has got a good start and made good growth that many weeds have much opportunity to develop seed in that crop

Now some of you men will have rib grass. I look upon rib grass and bladder campion as two of the worst weed seeds and two of the most cosmopolitan plants observed in the clover fields over the province and in nearly every district. Rib grass or buckhorn is found in a great many districts, and bladder campion, a weed that is spreading very rapidly, is frequently seen. It is coming to you through commerce in clover seed. It used to be found in but one or two districts, but unfortunately in those districts they have been growing large quantities of clover seed, and in that way it has been distributed over the country, until that plant is cropping up here and there all over.

Just a word about rib grass or buckhorn. The time that you can effectually rid a crop of that is, if you are pasturing a crop for clover seed, and you turn the cattle off about the middle of June, the growth is quite active then. Three or four days after that you may see a dark green plant growing, and by going over the field with a hoe or spud in your hand you can cut those plants below the surface, and you have done for that buckhorn plant. It is not a Herculean task to rid the field practically of buckhorn in that way. That may be done, following out the other two principles that are laid down, sowing clean seed on a clean piece of hoe crop ground. When you know that bladder campion plant, the way to get after it is to have salt along with your spud, spud it down in the ground and put a little handful of salt on it and that will fix the bladder campion plant. I would advise you to keep your eyes open for that plant and get after the very first appearance of it on your farm and it will save you a lot of labor and eliminate a trouble that will otherwise make your clover seed dangerous in the future.

I have not got to the harvesting part of it, and there are many other problems, but perhaps a few minutes can be spent in the discussion of that and that can be brought out in any questions that may be asked.

Q.—I came from a place where your description is perfectly right. I had sandy loam. It must be put deeper in sandy loam than in clay.

A.—A man has got to put the seed down where the moisture is. If the surface is too dry you can put it down a little deeper and have the moisture. You have got to have much more moisture in dry ground.

Q.—Where do we get rib grass seed?

A.—You may get it as an impurity in red clover and alfalfa seed, in the manure that comes from the stables in our towns and cities. There is no other way to get rid of it than that which I have mentioned. Keep the seed on the surface and germinate it and kill the little plants. That is the best way I know of to handle buckhorn under those conditions.

Q.—The question has been raised whether the heat in the pile will kill the buckhorn?

A.—It will take quite a large amount of heat in the ordinary manure pile to destroy the vitality of buckhorn. There is a good deal of mucilagenous coating

about it, and I intended to mention that fact. This buckhorn I speak of has a very distinct mucilagenous coat and when it is wet it develops that and then it sticks fast to the cheesecloth on the screen which I have spoken of to you; the clover seed has no mucilagenous coat and when it is dry enough on the cheesecloth it will all shake off. In the manure heap you will have to heat it very much to destroy the vitality of the buckhorn, which would diminish the value of the stable manure as a fertilizer.

Q.—Where would you buy clean seed?

A.—There is clean seed available in a great many places; I can't say absolutely clean seed, but I will tell you what I would do. I would get a sample of the seed I thought of buying, and if I wasn't a judge of it myself I would get a report on it from the department. If it were not so good as desired, I would then look around until I got seed that I could satisfy myself was all right. I could be a clearing house for hundreds of bushels of clover seed if I knew the growers of good clean seed and they would tell me the amount of seed they have and the price per bushel they were asking. We have communications in the office now from Prince Edward Island for a large quantity of seed. The farmers want seed, and I don't care how much clover seed you grow you will get a market for it if you grow good, clean seed; and you will always get a market for it.

Q.—You cannot buy it from the seedsman?

A.—You can buy some good, clean seed from seedsmen, but seedsmen are buying their seeds from growers, and they are bringing in large bulk lots and bulking them in their warerooms. If they could get it to conform to No. 1 it would be all right. Five noxious weed seeds to an ounce of red clover seed is allowed in a number one sample, but that is not a very large amount; it might be a larger amount than you want to sow, and any farmer who wants to sow good, clean seed had better look around and get a report on the sample before he sows it.

One gentleman says he has written for first-class No. 1 seed, but they will not guarantee it, and he has failed to get it from a large seed house. It is true the standard this year, by the law, is raised a little. It is a little purer than it has been heretofore, so there won't be so much of that No. 1 stock, but remember, farmers, it is in the hands of the grower to control that to a large extent, and you can weed the clover crop in the field more thoroughly than any other place. If farmers will do that they will get better prices for their seed every time; and from my experience as a farmer and from my knowledge gained as I go through the country, I believe it will pay. I believe a farmer, by taking ordinary precautions, can grow good, clean seed.

The question has been raised what is the proper stage of maturity to harvest clover seed. When you see a field turned entirely brown and when you shell out the heads and find that the seed has a purplish color to it, that is the safe time to cut that seed. Remember, farmers, the time you will get the most seed is when it blossoms out well. If it just burrs out a little and only partly blossoms you are not going to get a heavy crop of that clover seed. Another thing that has been observed in a dry season, after the clover has got a good start, is that you will get more seed when the bumble bees are thick. That is a factor, and I would like to see the farmers in the country put a flea in the teacher's ear that they warn the children to be a little more careful about robbing the bumble bees' nests. They haven't so many hiding places now, and it might pay to make some wool traps and put them up on the wire fences. We know how the honey bee helps to fertilize the alsike clover. Perhaps after a while we will get a red clover blossom that

will not be quite so long in the flower, so that the honey bee can fertilize it, but until we do, under present conditions it is well to safeguard the bumble bees of the country and protect them.

Q.—Is there any way to keep black meddick out of clover seed?

A.—Black meddick is looked upon, so far as seed is concerned, not as a noxious weed, but one of the more or less harmless weeds. You will get in your clover seed quite a large amount of this black meddick. Once you get it in the land it is a little hard to deal with. Sheep are the best agents for handling it; they will trim it down and keep it from going to seed when it is in the meadow, but the best way is to keep it from going to seed.

I want you to look out for seed that contains sweet clover. It is getting rampant everywhere. Some farmers growing clover are a little careless about that sweet clover when it is growing in their clover seed crop. It is a pretty bad nuisance of a weed and is very persistent in its growth and ought not to be allowed to produce seed. Don't let it go to seed in your fields at any rate.

The question has been raised what about the clover midge. There is a way of fooling the midge. If red clover is pastured until about the middle of June or as late as the 17th of June, and then you turn the stock off, if there is any growth left then go over it and trim it down all level with a mower and you will avoid the midge. The midge comes on a little later when the clover is out in full bloom, and if your clover is far enough advanced you can mow it for hay. It is a little more sappy and difficult to cure; but in the district of Bowmanville, along in Durham County, and in Ontario County, a great deal of clover seed is grown, and some of the very best that is grown in the Province, and I find a large number of the farmers go into their meadows and mow them before or by the 20th June and they do it to avoid the midge. The midge comes on a little later and lays the egg in the blossom, and if that hatches out into the weevil, the weevil goes down into the ground and hides there and is ready for the next bloom, but if the clover is cut before the egg is turned into the little red insect it develops in the hay and does not come out in the field. We don't want to let the midge get down to the ground. There is a fly that lays that egg. Perhaps if you have opened a clover blossom you have seen a little dark insect with transparent wings running around through it. That is the fly that lays the eggs that turn into the crimson midge that destroys the clover seed.

The question has been raised as to when is the best time for threshing the clover seed, and the best kind of machine. I would not be prepared to give a satisfactory answer to that question. There are clover hullers that are manufactured by the leading threshing machine companies all of which do good work. In the district which Mr. Fixter comes from there is very little seed grown and the ordinary threshing mills are being fixed up to do satisfactory work, and perhaps Mr. Fixter could give us a very good idea of that, but any of the clover hullers manufactured by the large companies so far as I have learned are doing good work, and if run with the engine you can thresh in the fall of the year as well as in the winter time.

Q.—Are the ordinary hullers not apt to grind up the seed?

A.—If they are properly managed there is no danger of that.

Q.—I had one last winter and it ground up about two bushels of the seed.

A.—Your clover must have been very dry and you must have set the concave part very close to the cylinder, because ordinarily you would have very little broken clover seed.

Q.—I have heard good threshers say if it is threshed in cold weather they will take out nearly all of the black meddick.

A.—I have never heard that before. That is something worth experimenting with at any rate. Where a man has a large amount of black meddick in his crop thresh it when it is very cold.

Q.—I find when I can get a machine to thresh alsike in the field I can get a lot more seed.

A.—Yes, haul it right from the field to the machine. I find a great many farmers who are growing alsike for seeding purposes are following that plan, of just as soon as it is dry enough getting a clover mill and threshing it in the field. I approve of that practise with alsike. Up in Essex I have seen them threshing red clover in the field, too.

Q.—Isn't there some waste around the machine?

A.—That can be avoided by putting canvas around the places where the seed comes out. One man says in two days threshing he only lost a peck. That is good experience.

Can you tell us, Mr. Fixter, how the ordinary grain thresher can be arranged to thresh clover seed?

Mr. Fixter: When running the clover through the first time remove the fanning mill belt, also the weed screen. Next put in the chaff board to stop all short material from going over with the long straw, the short material to be run through two or three times to take off the clover hulls. As soon as the hull is fairly well removed put on the fanning mill belt, but close the side boards so as not to blow out the seed. Next put in the seed sieve and the chaff board. The clover seed should then come out through the weed sieve.

Q.—Did you ever board up the cylinder?

Mr. Fixter: When I threshed with a small horse tramper I did, but with the large machine I let the clover pass right through. With the small tramper I boarded up the cylinder behind.

LESSONS FOR ONTARIO FARMERS IN SEED PRODUCTION, BASED ON OBSERVATIONS MADE IN EUROPE.

Geo. H. Clark, Dominion Seed Commissioner, Ottawa.

A few months ago I had occasion to estimate the proportion of the Ontario grain crop that is grown from first-class selected seed grain. I formed the opinion from a study of the records of the Canadian Seed Growers' Association, that about twelve or fifteen per cent. of last year's grain crop in the Province could be traced back to selected seed that had been grown by the members of that Association. I do not say that all of the other 85 per cent was poor quality of seed, because the Canadian Seed Growers' Association is not the only supply of good seed. I think it is reasonable to state that it is now the principal supply for high-class, selected seed. It would be probably not too much to say that 75 per cent. of the wheat, oats and barley grown in Ontario last year was produced from ordinary grain, a great deal of it perhaps well cleaned in the fanning mill, but grain that had been left in the bottom of the bin and had not been set apart for the purpose of seeding. Most of the seed grain used, judging from its appearance, could not be

distinguished from first-class selected seed. The value of selected seed is inherent but is not visible on the surface.

Six years ago there was less than one-quarter of the supply of high-class, selected seed that there is to-day, and yet that small supply had to go begging for a market. It was a source of worry to me, and no less to those engaged in growing and selecting seed, to have one-half of the supply of this selected seed left on the hands of the growers at the end of the season. They had not asked more than 25 cents a bushel in advance of ordinary grain prices.

At present I am sure that the supply produced by the members of the Canadian Seed Growers' Association in Ontario and in all the other provinces in Canada, is not equal to one-quarter of the demand for that seed. Why the change? Many of our farmers are like those from the State of Missouri. It is said that they are patient listeners, but are always ready with the reply, "You will have to show me." I am convinced that the reason we have such a large demand now for the best obtainable seed is because our farmers have seen for themselves that they can get at least ten per cent. more in yield of grain of better quality from using high-class selected seed.

Seed growing is a special line of agriculture. Many farmers prefer to raise Yorkshire pigs, Clydesdale horses or Hackney horses. Others make a specialty of some breed of cattle. Each makes a hobby of that which he likes best. We now have a goodly number of farmers—about 550—who make a specialty of seed growing and selection. There are not nearly enough of them to supply the demand for high-class seed. Here is a hobby in need of suitable riders, and those of you who have clean farms will find this branch of agriculture as interesting and as profitable, I think, as any branch.

Practices in Sweden. A comparison of the general practices in Ontario with those of the countries of Europe I visited a year ago, in respect to the quality of seed used, would not be very creditable to the farmers of this Province, although I must confess that the progress made during the past five years has been a source of encouragement to me, and I believe that within twelve or fifteen years we shall see Ontario farmers almost if not quite as careful about their seed supplies as are the farmers of England and Scotland, or even the farmers of Germany and Sweden.

I spent several days in Sweden. I went there to see the work of Dr. Nilsson and his scientific staff, who are engaged in plant improvement by breeding and selection. Large areas of land are used to increase the supply of selected seeds produced by these scientific workers.

I had only a limited opportunity in Sweden to get about and visit the small farmers. The average sized farm in Sweden is 25 acres. From what I saw and from the assurances I received from the staff, I am satisfied that fully 90 per cent. of the grain crop of Sweden can be traced back within a few years to Dr. Nilsson and his scientific staff. The farmers are working land worth from $150 to $250 an acre. Twenty years ago statistics showed the average yield of grain in Sweden to be among the five lowest of the European countries. You might expect that from the position of the country, away to the north. Two years ago—and some of their grain crops grow almost to the Arctic Circle—Sweden stood within the first five countries of Europe in the average yield of grain. If we take only the southern part of Sweden, the country of Malmus, the average yield of grain per acre is second only to England. That increase is not due entirely to the seed; it is largely due to the quality of the seed they have used, but it is due also to better

farming, to proper cultivation, to a scientific method of rotation, and to the application of fertilizer. The cheapest fertilizer they use is red clover seeds.

I should like to talk of the method of cultivation employed by those Swedish farmers. In my opinion they are the best farmers in the world. They have a system which makes easily available to all their farm boys a course in agriculture in the high schools that is similar to the first two years at the Ontario Agricultural College. With Prof. Greig, of Scotland, I visited a farmer who raised pigs. He had one stock boar for which he had paid not less than $300. I wonder how many farmers here would pay that much money for one pig? Some 2,000 pigs were under the direct charge of a young fellow about 24 years old. He had been attending those pigs as his profession for four years, and he was proud of his job. When Prof. Greig questioned the quality of the feed he was giving them, he opened a note book and jotted down what he was feeding, and he showed that the pigs were receiving a properly balanced ration. You will not find many farm laborers in Canada who would approach that man, who was engaged to tend pigs at $14 per month. I mention this to illustrate the intelligence of the Swedish farmers. I found that intelligence applied to every branch of their agriculture, and nowhere more than in the purchase of their seed grain. They do not hesitate to pay 10 per cent higher prices to get the best available seed.

GERMANY. In Germany I spent two days with Dr. Hilmann; he was engaged by the German Agricultural Society in work similar to my own in Canada. He had timed his visits to different farms so that I could go with him on one of his trips. We drove through the country, visiting farms, crops and farm homes, and I found it exceedingly interesting. A day was spent to the southwest of Berlin, a district of light and sandy soil that here in Ontario would be left to pasture; but land is more valuable in Germany and most of it is under cultivation. On a large estate of this light sandy soil I saw oats that would yield 60 bushels per acre. That was the poorest crop of oats I saw in Germany. They depend largely on clover as a fertilizer; they also use commercial fertilizers to an extent that would astonish Ontario farmers. They paid more attention to the quality of the seed used on that farm than on any other farm I visited. They have a contract with A. Heine, a professional seed grower, to supply them every year with a definite quantity of seed of a particular variety—enough to sow, I should judge, about 25 acres. The product of that crop is sufficient to sow large areas of oats on their farm and is conserved to supply the estate with seed oats. They have found from careful experiments that on that particular soil it is not wise to use their own seed oats for more than three years; the fourth year their own seed would mean a loss to them. It seemed impracticable to maintain on that particular farm the productiveness and quality of oats.

Another day was spent in the Magdelburg district where the land was good strong clay loam. There I visited a farm where they get their seed from a Danish grower. They had found that seed grain from their own crop gave almost, but not quite, as good a yield as fresh seed of the same strain imported from Denmark. Every year on that farm they have one field of the best prepared land on which to grow their seed grain. They keep it clean by going through the crop and weeding out any variety that seems to be not true to type. On land of that quality, naturally well adapted to growing oats, they find no need to change their seed more often than once in ten years.

PRACTICES RECOMMENDED FOR CANADIAN FARMERS. Let us apply the methods used by these German and Swedish farmers to Canada. Too many of our Ontario farmers, when they prepare their seed grain in the spring, take whatever

happens to have been left over from the previous year, clean it once through a fanning mill fitted with ancient sieves, and sow it. Some more progressive farmers, at threshing time, put fifty bushels more or less from the best field into a separate bin and reserve that for seed. That is a good plan, but it comes far short of the general practice of European farmers. It will pay you to get five or ten bushels of the selected seed for sale by members of the Canadian Seed Growers' Association in the seed department upstairs. You may have to try two or three different growers in order to get the best results for your own land. You will have to determine which is the best variety for your farm, then get the best selected strain of that variety, and, having procured a few bushels of good seed, keep it pure by hand-pulling not only weeds but other varieties not true to the one kind. Continue from year to year thereafter to grow your own seed on the best land on your farm. On reasonably good land you will not find it necessary, if you keep it pure, allow the seed to thoroughly ripen, and use a good up-to-date fanning mill, to go back for a fresh supply of seed oftener than every eight or ten years. I think it advisable occasionally to get a small quantity of new seed and test it for comparison with your own seed. But it is not necessary to change seed so frequently as is generally supposed.

Field Root Seeds. Just a word or two regarding field root seeds. Practically all such seeds used in Canada are imported. Most of them are grown in Germany, France, England and Denmark. The great bulk of the seed that comes to us is grown in the province of Saxony in Germany. I visited five large German seed farms. Each had a staff of experts, graduates of the German universities, who were professional plant breeders, engaged in improvement by breeding and selection of sugar beets, mangels, carrots and other field root and garden crop seeds Taking Magdelburg and other towns as centres, I drove through the country, visiting small farmers who grow mangel seeds in much the same way that our farmers grow red clover seed. This seed is marketed through brokers in the small towns; it is collected, bulked together and exported to foreign countries by larger brokers or seed dealers in Berlin, Magdelburg and Hamburg. That is the source of supply for the bulk of the mangel and other field root seed that comes to Canada and the United States. The price our retail seed vendors pay the importers for that seed is not greater than the price that would be paid to any of the large professional growers in Europe on the ground where the seed is produced. Six or seven years ago I did a good deal of hammering at our Canadian seed merchants because they didn't buy the best stocks of mangel seeds, but in the course of my experience in administering the Seed Control Act, I have seen farmers examine mangle seed put up in carton packages, and when asked 25c. a pound for it they would shake their heads and say, "I can get it for 18c. a pound right across the street."

No man, by its appearance, can distinguish wild beet seed from the best selected mangel seed. It is foolishness for farmers to buy seed from a dealer who is not a capable seedsman. Our best seed houses conduct their business on a percentage of profit basis, and it is false economy for any farmer to save five or even ten cents per pound on field root seeds. Buy your seed from the most conscientious seed merchant you know. Tell him you want the best that can be had. Do not question the price. He may take—and to conduct his business he must have—a good profit. He is going to have that anyway; but don't hazard your crop by buying cheap seed. There is too much of that kind of seed now in the market, because cheap seed is the principal kind demanded.

Mr. Fixter: Can we successfully grow our own mangel seed?

MR. CLARK: If you are acquainted with the process you can. When I talked five years ago to some of our Canadian seed merchants about growing our own mangel seeds, I was almost invariably told that our climate would not permit it; that they couldn't be grown here successfully. I didn't believe that. I believe our Ontario climate is better for growing and maturing mangel seed than is the climate of Europe, but our labor is expensive compared with theirs. It is three years ago now since an experienced seed grower of Europe came to Waterloo and started in a small way experimenting to see whether he could grow mangel seed here. His efforts came to our attention. It was clear that certain conditions of our climate were different from those of Germany, and until these could be overcome he could not afford to go far with his experiments. We undertook to help him with the cost, and I can tell you with confidence now that mangel seeds can be grown in Canada as well as in Europe. I have reason to believe that the seed grown in our own climate is better for use in Ontario than any imported seed, provided the selection is equally good.

Q.—Hasn't the turnip seed degenerated?

A.—I don't think so. The best growers of turnip and swede seed have difficulty in preventing their stocks from cross fertilizing, and I fear that much of the turnip seed used in Canada is not produced by the most careful growers.

Q.—In that crossing would you be apt to get a mustard crossing?

A.—I don't know. I have been told that such a cross sometimes is effected naturally.

Q.—Where shall we find a reliable seedsman from whom to buy our seeds?

A.—I would be putting my head into a noose were I to answer that question.

Q.—For the last few years I have bought mangel seed in packages, and every time it has been mixed; there have been anywhere from five to ten or fifteen different kinds, and I paid a good price for it. What is the difficulty?

A.—A few years ago one of our most reliable seedsmen started to put special stock mangel seed in carton packages and sold it at a high price. I have knowledge that he didn't get as much money for that seed, after all expenses were paid, as it cost him in Europe. The farmers began to want mangel seed in the carton packages, and it wasn't long before several seed merchants commenced putting it up. It is to be regretted that we have not some way of controlling the qualify of seed put on the market; but I am hopeful that the results of the Waterloo experiments will lead, sooner or later—I hope sooner—to the establishment of thoroughly reliable seed growers right here in Ontario. We shall then not need to import our supply.

Q.—With regard to different seeds in the same package, is it not possible that seeds from the roots of what I would call hybrid or cross-bred mangel seeds would revert again? The product would be of a type similar to the two varieties it originated from. For instance, I understand some of the yellow mangels result from crossing two varieties of roots. Would it not be possible for the seed from the yellow mangel to bring forth a red and white beet?

A.—It is quite possible that the originator of the variety might send out the seed before he had the type fixed. Even after the type is well fixed, there are instances of sports occurring. I think it is more liable to happen with turnips, cabbages and cauliflower than with mangels, though it does occasionally happen with mangels.

Q.—I buy seeds put up in cartons from different firms. Some of them are inferior and others nearly every time produce a better crop, a stronger crop in

every way. I haven't yet bought seed absolutely true to type; I would find, as you say, sports.

A.—If you could get seed from the best source of supply—I refer to those large seed farms where they are handled as carefully as at any of our experimental stations—I think you would get mangel seed that would run 97 per cent to 100 per cent pure. The trouble is that our seed is obtained from a lot of small growers. When mammoth red clover seed brings a premium of 25 cents over common red, plenty of farmers have mammoth red; when common seed is higher priced than the mammoth, they have plenty of the common. It is much the same with mangel seed; many of the small growers have seed of the variety most in demand.

Q.—Did I understand you to say that you would advise sowing seed grain for ten years to get good quality? My experience has been about three years; I like to change about every three years. I think it is advantageous to change oftener than ten years. Would like to have your opinion.

A.—It depends largely on the condition of the land. If a farmer's land is well adapted to growing grain, particularly to the variety he is growing, and he takes care of his seed and allows it to mature, there is no advantage in changing it oftener than once in ten years. I think after ten years there is some advantage in going back to the man who is doing the best work of selecting. If the land is poor and hungry and not well suited to wheat or oats, then I would do as the German farmer on the sandy soil did. He found from experience that it paid him to go back for a new supply of seed every three years. It depends entirely on how the seed is cared for and on the condition of the land.

THE PRODUCTION OF ALFALFA SEED IN ONTARIO.

C. A. Zavitz, Professor of Field Husbandry, O. A. C., Guelph.

Before taking up the subject I wish to say a word or two in reference to the excellent talk which you have just had from Mr. Clark. One point is in reference to the growing of root seed and mangel seed. I might say we have been carrying on some work at the College during the past few years in growing mangel seed, and we have had very good success in that we find we can grow mangel seed here of good quality. One trouble is that in some seasons the plant does not mature very evenly, and in a season like we had this year there is considerable of the crop which does not mature. Some seasons we get very good seed indeed and have had very good results from home grown mangel seed.

In reference to the last question, we have grown some 35 different varieties of grain from 16 to 22 years without any change of seed whatever from any outside source, and I might say that the yield per acre in the last few years is greater than the yield per acre during the first few years, without any selection of plants, simply by selecting good seed each year. So it is possible, at least in some cases, to grow seed for a long while without changing from one farm to another.

The subject which is given me to speak upon this afternoon is the growing of alfalfa seed. I think it was some two or three years ago in this hall that we took up the growing of alfalfa. This time we are to consider for a while the growing of alfalfa seed in the Province of Ontario and what I say will be based largely on information which I have gained from a number of men over Ontario who have

been growing alfalfa seed for a number of years, and in most cases have been growing it quite successfully indeed. I believe you can grow alfalfa seed in Ontario with a great deal of success, especially on some farms and with some soils.

I brought with me a little sheaf of alfalfa which we grew out at the College this summer. I think it is a beautiful sheaf; you can see the growth. You can see the little whirl of buds and they are very well filled; although it has not been a very good year for alfalfa seed, the yield not being more than about one half, you will see that it is very well loaded indeed.

The area devoted to the growing of alfalfa in Ontario has been increasing rapidly during the past few years. While it is true that a few farmers in different parts of Ontario have been growing alfalfa successfully for ten, fifteen, twenty and even thirty or more years, the crop has not been brought into very general cultivation until quite recently. As the proper methods of growing alfalfa become better known, its successful cultivation is rapidly increasing. Within the next few years the area devoted to this crop in the Province of Ontario is almost sure to be extended considerably. Its large yields of nutritious feed for farm stock, its perennial character of growth, and its beneficial influence on the soil are all features which commend it very highly for those farms on which it can be grown successfully. From experiments conducted at the Ontario Agricultural College during the past fifteen years, I would suggest the following method for its cultivation.

For the best results select land having a clean, mellow, fertile surface soil, over-lying a deeply drained, sweet subsoil. Use large, plump seed, free from impurities and strong in germinating power. Inoculate the seed with the proper kind of bacteria, providing alfalfa has not been grown successfully on the land in recent years. In early spring make a suitable seed bed and immediately sow about twenty pounds of alfalfa seed per acre from the grass seed box placed in front of the grain drill, and about one bushel of barley or spring wheat per acre from the tubes of the drill. Smooth the land with a light harrow. Harvest the grain as early and as quickly as it ripens and its dryness will permit. Do not cut or pasture the alfalfa in the autumn. If for hay, cut each crop of alfalfa in the following year as soon as it starts to bloom. Try to retain as many of the leaves on the stems as possible, and to protect the crop from rain. Never cut or pasture alfalfa sufficiently close to the ground to remove the crowns of the roots and thus injure or possibly kill the plants. If these directions are followed, the alfalfa may be expected to produce large and valuable crops for a number of years without re-seeding.

In some parts of the Province, the production of alfalfa seed is becoming quite an industry. As both a crop of hay and a crop of seed can be produced in the same season, many of the alfalfa growers find seed production quite profitable. The production of alfalfa seed is important, not only to those who actually produce the seed, but also to the farmers who are thus enabled to secure seed which has been produced in a climate which is similar to that under which the crop is to be grown. Realizing the importance of such an industry, I recently made an inquiry regarding it, by corresponding with a number of our principal farmers who are growing alfalfa seed quite extensively. I take this opportunity of presenting the summary of the replies received from the men who have been actually growing alfalfa seed in this Province for a number of years.

I received replies from eighty-one Ontario farmers who have grown alfalfa seed on their own farms from one year to fifteen, twenty, and even thirty years. The forty-three farmers who reported that they have grown seed for five years or

more reside in seven counties in the southwestern part of Ontario, and more than half of them are located in the counties of Haldimand and Lambton. The counties of Welland, Brant, and Lincoln are also well represented and the counties of Kent and Wentworth are included in the list. The thirty-eight farmers who reported as having grown alfalfa seed for less than five years reside in the seven counties already referred to and also in the counties of Elgin, Oxford, Waterloo, Huron, York, and Durham. It will, therefore, be seen that we have reports from thirteen counties in Ontario in which alfalfa seed has been grown as a farm crop. The information which I will now present has been obtained almost entirely from the reports of those forty-three farmers who have grown alfalfa seed on their own farms for five years or more.

The forty-three farmers have grown alfalfa hay from six to forty-five years, the average being about fourteen, and they have grown alfalfa seed from five to thirty years, or an average of between nine and ten. The areas used for the production of alfalfa seed have varied from three to forty acres previous to 1910 and in the last year from nothing to thirty-five, the average for all the men for 1910 being 11.5 acres.

Every one of the forty-three farmers stated that he had used the second crop for seed production. One farmer, however, referred to the fact that he had used the first crop for seed in a few instances. According to the reports the yield of seed varied considerably, the highest being seven bushels per acre, obtained by Mr. James Douglas in Brant County. One farmer in Haldimand County, and another in Brant County reported that they had obtained an average of about four bushels of seed per acre. Another farmer in Haldimand county states his average to be only three-quarters of a bushel per acre. The average yield per acre obtained by all of the farmers for all of the years in which seed has been grown is 2.07 bushels. The quantity of seed per acre seems to be influenced to a marked degree by the conditions of the season and by the quality of the soil.

In response to the inquiry as to how it is known when the crop is ready for cutting for seed, thirty reported that they determine the maturity of the crop by the color of the pods. Fourteen stated that they cut the crop when the pods were brown, eleven when the pods were black, one when three-quarters of the pods were brown, another when the pods were dry and still another when there were no green pods. Seven reported that they determined the ripeness of the crop by an examination of the seed. One man cut his crop when the main stems became dead, and another when the leaves dropped off.

In regard to the method of cutting the crop, twenty-one mentioned that they had the mowing machine, twelve that they used the mowing machine with a table attachment, nine that they used the reaper, and five that they used the self-binder. In a few instances a farmer has used, at least, two different methods. The method of cutting seems to be determined by various factors; such as, the length of the plants, the uprightness of the growth of the crop, the presence or the absence of steep hillsides, etc. Some farmers speak of following immediately after the mowing machine with a rake so as to prevent the horses and the machine passing over the crop.

The methods of curing the alfalfa seed crop in the field is determined largely by the method of cutting and the amount and the maturity of the crop. As a rule, the crop is cured in the windrow by those who use the mowing machine, in the bunches by those who use the mowing machine with the table attachment or the reaper, and in the shock by those who use the self-binder. In most instances the crop when cut with the mowing machine is either raked immediately or shortly

afterwards when the plants are toughened by the dew. In a few instances, however, the crop is allowed to lie unraked for several days. In only a few cases did the farmers state that they placed the crop into cocks. Practically all of the farmers who cut the crop with the self-binder and placed the sheaves into shocks reside in the County of Brant and have had from eight to thirteen years experience in growing alfalfa seed, each having from ten to twenty acres in a single year.

The threshing is done almost entirely with the clover machine, and at any time from harvest until mid-winter. In the autumn it is preferable to have dry weather and in the winter to have cold weather, in order to obtain the very best satisfaction from the threshing.

Twenty-three of the farmers reported that they have always obtained a good quality of seed, and the others have indicated that in one or more years of their experience the seed has not been of the highest quality. It seems quite evident that alfalfa seed of very good quality is being produced in Ontario.

The prices realized for the seed have varied from four to thirteen dollars per bushel. The average price of all of the seed grown by the forty-three farmers in the different years has been about eight dollars and ninety cents per bushel. The seed has been sold to neighboring farmers and to seedsmen.

As the greatest difficulties in producing seed, two or more farmers referred to each of the following: grasshoppers, blighted plants, wet weather, hot weather, early frosts, too rank a growth and too thick seeding. Besides these, one farmer mentioned the difficulty of producing seed on account of drouth, another from cutting the second crop too late, and another that insects had eaten the seed.

Thirty-seven farmers stated that seed production does not injure the plants, one grower mentioned that he thought it did a little, and another that it might if the crop were cut for seed too often.

The majority of those farmers who have had the greatest experience in the production of alfalfa seed in Ontario consider that the growing of alfalfa is almost sure to be greatly increased for the production of hay and for the production of seed. Thirty-six out of the forty-three seem quite decided on this point, while the others were not so sure in regard to the seed production, owing to the fact that the crop of seed seems rather uncertain. The following are some of the comments made in the reports:

"We have had two crops of seed, which brought as much money as the land was worth."—JOHN SERM, Haldimand Co.

"Next year I expect to have about forty-five acres for seed."—W. A. BRAYBROOK, Lambton Co.

"I have grown hay and seed on the same field for fifteen years in succession."—J. ROLAND, Welland Co.

"I have had but one good seed crop in six years."—R. H. SECORD, Lincoln Co.

"The second crop of hay usually pays as well as seed."—F. H. TRIMBLE, Wentworth Co.

"There are quite a lot of farmers in Brant County who grow their own seed and have ten to forty bushels to sell, as it generally yields well."—JAMES DOUGLAS, Brant Co.

"I think three or four crops of hay generally pays best."—C. MISENER, Haldimand Co.

"I know of fields growing alfalfa for over twenty years, in ten or more of which seed was produced."—J. W. RICHARDSON, Haldimand Co.

"Good alfalfa land farms should be sought after as keenly as good fruit lands."—JOSEPH ROLAND, Welland Co.

"With only one exception I have always seeded with home grown seed and without a failure."—J. F. SELMAN, Lambton Co.

"I have a nine-acre field which has been down fourteen years. Last year I had sixteen bushels of seed, one year I had thirty bushels. The years I have not cut for seed I have taken off three crops of hay."—MICHAEL N. SIMPSON, Brant Co.

For results of experiments on alfalfa growing at the Ontario Agricultural College reference is here made to the College Bulletin No. 165, or to the Annual Report of the Live Stock Associations, 1909, both of which can be obtained by application to the Department of Agriculture, Toronto.

The information presented at this time, which is a summary of the reports from those farmers who have in most cases made a marked success of alfalfa seed production, should be of great value to other farmers in the Province. When we realize that the first cutting of alfalfa will usually produce a good crop of hay, and that the second crop will produce, in the same year, fully two bushels of seed per acre, which will sell on an average of nearly nine dollars per bushel, or a total of from seventeen or eighteen dollars per acre, and that the alfalfa will remain in the land for a number of years without re-seeding, it shows not only the possibilities, but what is actually being done in a somewhat extensive way by over forty Ontario farmers. We, therefore, present these results in the hope that they will be carefully considered, and that they will prove of real service, not only to those who are already growing alfalfa, but also to those who wish to start the cultivation of this important crop in the near future.

Q.—Have you any evidence of it choking underdrains?

A.—I have never had any direct evidence of it; I don't think it is like a willow tree.

Q.—Are they not more inclined to avoid the drain than seek it?

A.—The alfalfa will keep out of the water.

Q.—What about dodder in alfalfa?

A.—The dodder comes under the Seed Control Act; you should not get any dodder in alfalfa. Alfalfa wants a sweet soil; it wants lime in the soil.

Q.—Is it a good time to disc alfalfa in the spring

A.—We have not tried it a great deal. There are some good claims made for it. I believe there may be some advantage in alfalfa in using a disc to clean out the weeds.

Q.—Hasn't splitting the crown a tendency to destroy the crop?

A.—We haven't had much experience. One man said in doing that that a fungus got in and destroyed the whole crop. Alfalfa in itself is not a special pasture crop. It is a hay crop, it is a green fodder crop, it is a seed crop. I would not recommend specially pasturing alfalfa; animals are apt to bloat on it. If I was putting in a pasture of grass and clover I would by all means put in some alfalfa with it.

Q.—We pasture alfalfa right along. We have been pasturing for twenty years all our stock on alfalfa, and we have never found any bad results.

Q.—Is it a good soiling crop?

A.—Yes; it is one of the best soiling crops I have ever found. I have never found any injury from it whatever.

Q.—Doesn't it hurt the crop itself?

A.—Not as a rule. Sometimes if you cut it a little on the green side it will injure it and sometimes it will not.

Q.—I have cut it early and ruined it for that season.

PROF. ZAVITZ: I believe alfalfa is here in Ontario to stay, and if we give it right conditions and look after it I believe it is one of the very best crops we can grow on our farms.

THE DEALER'S DIFFICULTIES IN SECURING AN ADEQUATE SUPPLY OF THE BEST GRADE OF EGGS.

JOHN A. GUNN, VICE-PRESIDENT, GUNN-LANGLOIS CO., LTD., MONTREAL, QUE.

It is nearly twenty-two years since I first handled eggs for a living. At that time everything was done on a comparatively small scale. To substantiate what I say, I hold in my hand a document covering an agreement with our firm, signed by all the large country egg dealers, whereby we were to handle all their eggs shipped to the city of Toronto. This amalgamation was known as the "Egg Dealers' Association of Ontario." It was dated at Stratford, March 20th, 1888, nearly twenty-three years ago.

According to this agreement, we were to be supplied with 50,000 dozen eggs for our winter trade. To-day it takes millions of dozens per annum to supply our customers' wants. This development is not peculiar to ourselves alone, but applies to other firms, who, like ourselves, have been the fathers of the industry.

I have no apology to offer for being here this evening. The industry with which I have been associated for so many years holds a position of importance in Canada which, in my judgment, is second to none.

Last February I had occasion to inquire into the conditions in the United States. What did I find? That the hen in three months, with a week to spare, can produce wealth equal to all the capital of all the banks that clear through the New York clearing house, and I wish to state that there are fifty banks that clear through that clearing house, with a capitalization of $127,000,000.

It is estimated that the hen can in sixty days produce value equal to the total production of all the gold mines in the United States. The United States also boasts of its enormous production of pig iron, by far the greatest of any country in the world, and yet the hen produces as much in six months as all the mines do in a year. If the total value of the production of the hen was diverted to the paying off of the national debt of the United States, it is computed that she could accomplish this in one year and ten months.

This is not taking into consideration the value of the hen itself, which, as you know, is a great financial factor.

While we have not been able to collect the same data as regards the statistics of Canada, it is reasonable to assume that it shows a value in harmony with that of the United States, allowing for the difference in population; consequently I can be excused when I say that the egg and poultry business is one of the most important, if not the most important branch of industry we have.

Only a day or two ago I received a communication from the Hon. Mr. Fisher, giving me approximate figures as to the produce of the hen as compared with dairying and the leading manufactures. These figures I have pleasure in giving you,

and I consider them on the conservative side so far as the product of the hen is concerned, but they are sufficiently striking to convince the most skeptical of the importance of the egg and poultry industry. The figures are as follows:—

It has been estimated that in Canada this year the total production of poultry will be 25,000,000 head. Two-thirds of this number, or 17,000,000 would be laying hens, and at the same rate of laying, as shown by a census taken a few years ago, these would produce 120,000,000 dozen eggs, which, at 20c. per dozen, would be worth $24,000,000.00. It is generally considered by authorities that the value of the poultry equals that of the eggs, so that we would have, therefore, $48,000,000 as the value of the poultry and eggs in Canada this year. The value of the manufactured products, as taken at the last census, was as follows:

Iron and Steel	$52,587,051
Leather and its finished products	41,201,872
Textiles	84,370,099

And the last statistics in connection with dairy productions were as follows:—

Butter made in Factories	$10,949,062
Cheese	23,597,639
Condensed Milk and Cream	910,842
	$35,457,543

This shows that the value of poultry was over $13,000,000 more than the dairy industry, that is to say, so far as the aggregate results of the marketing of dairy produce is concerned. Of course we must not forget that there is a large quantity of milk and butter consumed on the farm, which would no doubt run into quite a large amount, but we can only deal with the net results of the disposal of produce on the open market.

I do not wonder that so many fair ladies and brave men have ventured out this evening to hear something which may, I hope, mean that some of this great wealth may flow their way.

I am pleased to see so many Ontario ladies taking an interest in this work, but you are not the only ladies interested in this industry. In the Province that I came from, Quebec, the industry also has its following.

A few weeks ago our company decided that we could not wind up our season's campaign for "More and Better Eggs and Poultry" in a more fitting manner than by having a quality contest.

In making entries, applicants were asked a few questions relating to the quantity of poultry, production, and general facilities for handling and increasing same. One question in particular was: "What equipment have you for increasing your flock?" The first application received was from a Madam of the Province of Quebec, and she answered this question by saying: "Rooster, gander, drake." It is evident from this answer that old-time methods prevail on her farm, and that she has not yet learned the importance of artificial incubation.

We have already emphasized the importance of the egg industry. Dealers are willing to go on as they have been doing, and make all the profit they can under existing circumstances, but still there is a better way whereby dealers can make just as much profit out of the business and the producer can make a great deal more.

Let us for a few moments discuss this question, and in order to do so let me state what I consider the three greatest difficulties which dealers have to contend with under existing conditions:

(1) The shortage of eggs and the lack of uniform supply.
(2) The cost of collecting eggs.
(3) The absence of standards and necessary legislation.

First, why is there a shortage of good eggs? Is it because the production of eggs does not pay the producer? As far as statistics go the reverse has been proven. Persons who give their poultry plant the same thought that they give the other departments of their farm all admit that there is money in poultry. Poultry managed intelligently can be handled with profit anywhere, in the back yard, on the farm, or in some instances on a much larger scale. I know a man handling a large business in Montreal, who is away from his house at five o'clock in the morning and not back till six o'clock at night, who from a flock of thirty-eight common hens sold this year, from Feb. 1st to Oct. 1st, eggs to the value of $80.00. These hens cost $28.00. This gentleman believes that if he had a higher grade of stock he could have done 50 per cent. better, and is going to make a thorough experiment next season.

This statement shows that even when poultry is kept in contracted quarters, if properly handled they will give a good account of themselves.

We all know that the ideal place for poultry is on the farm, and I venture to say that if I were to ask a number of ladies in this audience whether they would agree to do without their poultry plant, one and all would say "No," and would admit that they make more out of their poultry for the money invested than from any other department of the farm. I know a farmer's wife, not far from Montreal, who never considers that she has had a successful year unless she has realized at least $300.00 from her forty White Wyandotte hens. But both of the flocks already mentioned are small; the average farmer should have more. I know of one flock of 700 hens from which last year there was sold eggs for which was received over $2,300.00, and this did not take into account the eggs put into incubators. The shortage of eggs, therefore, is not because poultry does not pay the producer.

I went to considerable trouble last winter to get a census, as near as I could, of the number of hens kept on the farms in Canada. The latest statistics which were available showed that farmers throughout Canada only had an average of 35 head of poultry per farm. Farmers having 50 acres of land or under have every facility for keeping at least 50 hens, and farmers having more than this quantity could just as easily keep 100 hens. If this could be brought about, it would give us from two to three times the quantity of poultry which we have in Canada to-day, and naturally two or three times the quantity of eggs.

As a proof that a shortage does exist, last year there was imported into Canada from Russia, China and the United States, over half a million dozen of eggs, and I may say that the companies I represent have to curtail their operations in eggs owing to their inability to secure the quantity and quality of eggs that they have the outlet for.

The season of the greatest production is during the spring months, and probably during these three or four months more eggs are produced than during the remaining months of the year, and not only is the short crop of eggs a difficulty that dealers have to contend with, but the fact that the bulk of these eggs are laid during this very short period increases the difficulty.

Now we have already intimated where farmers could increase their output very considerably, namely by keeping more hens.

One other difficulty which I now wish to draw your attention to is the lack of a uniform supply. Poultrymen tell us that the hardest season to produce eggs is during the late fall and winter. As a dealer, I would like to know if there is

no way of keeping up at least a fair supply of eggs during these months. Could we not, by hatching out a few early pullets, continue our egg supply during the months when eggs are so high in price? If farmers would pay attention to this matter, and give us all the assistance they could, dealers would not have to resort to the use of cold storage to the same extent that they do at present to keep up this regular supply that is absolutely necessary to satisfy the daily demand.

Take, for example, last spring: The early production of eggs was so great that the capacity of all the cold storages in Canada was taxed to take care of the surplus over and above the daily requirements. Even in the face of this the price that was paid to the farmer for eggs averaged close on to 20c. per dozen. Had there been no cold storages, the price would, in all probability, have averaged from 7c. to 10c. per dozen, while thousands of cases would have found their way to the dump. Yet in the face of this, and in spite of the large stock put away in the spring in cold storages, we stand prepared to-day to pay 45c. per dozen delivered in Montreal for every guaranteed new laid egg that producers at the present time can deliver us.

The question of cold storage hardly enters into the subject under discussion, but I do not wish to lose the opportunity of showing how absolutely essential it is for the farmer at the present time. It is hardly possible for us to figure out just what the loss to the farmer would be had there been no cold storage last spriug, but it would have been enormous.

Another question which I will leave with you: What makes the difference between the price of eggs to-day and 15 years ago, when eggs could be bought in the spring of the year at 10c. per dozen, as against double the price this year? Simply the ability of the dealers to take care of the surplus. Speaking for my own companies we would far rather have a uniform and regular supply of eggs throughout the whole year, in preference to taking the great financial risk that we do every year in carrying the surplus over until the time of scarcity when the supply of eggs drops off.

This brings me now to the second great difficulty which dealers have to contend with, namely the "Cost of Collecting." In the spring of the year, when the quantities are large, the quality good and the weather favorable for carrying eggs for a few days, this difficulty does not appear, but when the hot weather arrives and the supply falls off the difficulty increases.

When the supply is large the deliveries are necessarily frequent, but as the supply decreases there is not the same interest shown on the part of the collectors or the producer to have the eggs marketed with the same promptness which, on account of the warm weather is so essential at this season of the year.

This, to my mind, is the greatest difficulty that the dealer and producer has to contend with, and as an experiment, with a view of trying to overcome this difficulty, we engaged the services of an expert egg and poultry man, whose duty it was to visit various sections of the country and conduct educational meetings. This had a certain effect, but we found that to accomplish the object we had to engage the services of another expert, who had to locate permanently in a section and personally see that the eggs were gathered from the farmers in the locality several times a week. Owing to the small quantity of eggs which could be gathered in this way, the cost of gathering was extremely high, so high that it is practically prohibitive from a dealer's standpoint; but our experience has taught us that it is the only way to secure a class of egg which the consuming public demands, and is willing to pay for, and if farmers would endeavor not only to increase their production but to co-operate in the marketing of their output, they would secure

better prices and dealers would get the quality for which they are willing to pay.

To show that this quality of egg is worth more to us, last summer when the ordinary summer store egg was selling at from 14c. to 16c. we were paying from 20c. to 21c., and the price was advanced with the season.

The present system which is in vogue in Canada to-day is doing a great deal of harm to the egg and poultry industry. A large amount of the trouble lies with the small dealers who give trade for eggs. I need hardly go over this; you know the conditions yourselves. A storekeeper, especially in a small town, makes a living from the farmer's trade. The farmer brings in butter, eggs and poultry, and wants all he can get for them. One merchant in the town offers one price, and the other goes a fraction higher; the one offering the highest price gets the business. It is just possible that he loses on the eggs when he disposes of them, but this does not matter as the first merchant, when he finds he has lost his customer, raises his price and offers more, which causes the farmer, who loves high prices, to make an extra effort to supply him with all the eggs he can get, so the barns, orchards, bush and lofts are searched, and forced to give up their sometimes ancient supply of eggs. This competition compels the merchant to pay a higher price for eggs. As doubtless you know, merchants often offer one and sometimes two cents per dozen more in trade than they realize from the buyers, and advance the price of their merchandise accordingly, and it is needless to say that in a transaction of this kind the farmer makes almost nothing by the competition. These eggs, which sometimes run about 50 per cent. rotten, are shipped to houses like my own, which figure on a certain loss and quote prices accordingly. The merchant sometimes discounts the future, and holds the egg for an advance in price; especially is this the case in the Fall. The result is that in October and November, when eggs ought to be at their best, we experience considerable loss from "held eggs."

You will see from this that the farmer and the small storekeeper are both to blame. Any man who deliberately tries to sell eggs as fresh, which he knows are not fresh, deserves no consideration from the people or the law, but the one who, through ignorance, sells eggs which are not of first quality should be enlightened.

I have already given you some figures which show you how important the egg producing industry is, even under the adverse conditions which I shall now refer to. Dealers for years past have been endeavoring to find some method for overcoming and checking the great wholesale waste which occurs annually through loss from cracked, broken and bad eggs.

About a year ago, my attention was drawn to a determined effort on the part of several states of the union to eliminate this waste. It was then that I came to figure out what this waste really meant to Canada. With the assistance of our good friends, Professors Gilbert, Graham and Elford, to whom producers in Canada owe a debt of gratitude, which they never can repay, for the untiring efforts which they have put forth, to improve the egg and poultry conditions in Canada, I was able to secure reliable information regarding the production.

We estimated that between three and four million cases, or a fraction over one hundred and twenty million dozens were produced during 1909. Our experience, as well as that of other dealers, shows that the average preventable loss totals 17 per cent of the whole, made up as follows:—

Soiled and dirty eggs	2 per cent.
Mouldy and bad flavor	½ "
Breakage	2 "
Chick development	5 "
Held eggs	5 "
Rotten	2½ "
	17

On the basis of the aggregate stock totalling what we have estimated it at, this would show that a total of seventeen million dozen in Canada alone, are affected each year. It is quite true that from the dirty, shrunken and held eggs some revenue is secured, but there is eight per cent. which is an absolute, total loss.

In addition to this, there is the loss that is represented by the cost of the buying, labor and freight to be added. Figuring only the total loss of eight per cent. at an average price of eighteen cents per dozen, you have the magnificient sum of over one million, four hundred thousand dollars. Now it would be safe to figure that the remaining nine per cent. of affected eggs would show an average loss of five cents per dozen, which would make an additional four hundred and fifty thousand dollars. Add this to the one million four hundred thousand dollars, and you have a total of one million, eight hundred and fifty thousand dollars, which could, and ought to be saved to the farmers of Canada each year.

I am satisfied that these figures are a very conservative estimate, and when you add to that the additional expense of labor and freight as already referred to, you have a total which is staggering.

From the foregoing loss which the producers are suffering, I know that you will agree with me that my third heading "The Absence of Standards and Necessary Legislation" is one of the greatest importance, and one which you as producers, and we as dealers should stand shoulder to shoulder in endeavoring to overcome.

What does the enactment of proper standards and legislation mean to the farmer? It would mean that those farmers who are progressive, and who are interested in making money out of poultry, would reap benefits which under the present conditions are impossible. To-day, under present conditions, the farmer who markets good eggs to the storekeeper gets the same price as the farmer who brings in the bad eggs. This state of affairs does not tend to encourage the honest producers, nor does it strengthen the bond of union that exists, or should exist between the producer, the wholesaler and the consumer.

I am inclined to think that too often you producers act as if the wholesaler is your enemy; this is wrong. I, as a wholesaler, feel that the producer is my best friend, and that he and I should work together for the best interests of both of us, and though I admit that the system of buying eggs in the past has not been the means of eradicating this suspicion, I think I am right in saying that you, as a producer, have not done all that you might have done. You know, that the key to the situation is in your own hands, and still you do not use it. If the producers sell nothing but the high quality article, we as dealers would give you a price consistent with the quality. The absence of any recognized standards makes it easy for misunderstandings to arise. If we buy from you a case of number one eggs, is your understanding and mine the same as to what "Number One" implies? If the Canadians had a national interpretation it would mean much to the industry. There is no reason why a man should be prosecuted for putting bad apples into barrels which he marks "Number One" and then be allowed to fill a case with rotten eggs and ship them as new laid and go unpunished. This is a question which must be settled before one of the big difficulties of the egg business can be overcome. Such legislation will mean that a producer must use his bad eggs at home, or what is better, have none, and it means also that we as dealers will have to pay a higher price for a guaranteed article. But under these conditions, it will not be necessary for firms like mine to keep a staff of candlers busy the year round picking out the rotten eggs which you send us, we can give you the

cost of this labor in the price of the eggs. Do you know that it is to your advantage to have this? *You pay for the candling.* True legislation would say that the dishonest man could not market his stale eggs as new laid, but no honest man, who realizes what he is doing would think of selling under a false name.

I have gone to the trouble of looking up what legislation there is on the bad egg problem in the United States: I find that this is not a new move there, if new in Canada; scarcely a state of the union but what has a law to cover the sale of rotten eggs.

If we take the reports of those states of the union which have been operating under such a law, we cannot but come to the conclusion that, from a producer's standpoint, a similar law in Canada would mean much for the egg and poultry industry.

I am glad to know that producers have already started a propaganda along this line, and I believe that if the scheme advocated by the Poultry Producer's Association, of which Prof. Graham is an officer, was adopted there is no doubt that the truth of what I have already referred to, namely that the producer and the dealer are but two members of the same firm, and indispensable to each other, would be proved. The solving then of the difficulties I have enumerated depends upon both of us. We as dealers are willing to do all we can to bring about a better system, and I believe that every producer here will do what he can because it not only helps the industry but puts money in his pocket. Why not, then, ask the Government to give us legislation that will make it impossible for the dishonest producer to get the same price for his eggs as the honest producer ought to receive? Why not make it impossible for the dishonest dealer to sell stale eggs for new laid? I am sure you see this in the right light, and that you will be willing to give your heartiest co-operation to any movement that would bring about a better state of affairs.

Judging from the keen interest which your presence here this evening shows that you are prepared to take in this matter, I feel that it would not be out of place for this meeting to pass a resolution which would be submitted to the Honorable Minister of Agriculture, urging that effective means be taken to bring about a better condition of affairs in the egg and poultry industry. With your permission, therefore, if I can get a seconder, I will move the following resolution:

(1) Whereas there is no law on the Canadian Statute Books making it a criminal offence to offer for sale or sell rotten, decomposed, tainted, or otherwise bad eggs which are unfit for food.

(2) Whereas the consumers, merchants, and producers suffer great inconvenience as well as financial loss from this cause.

(3) And Whereas under the present system of marketing eggs the same price must be paid for everything contained in a shell and called an egg, unscrupulous producers, egg gatherers, and dealers are tempted to offer for sale eggs which are rotten, decomposed and unfit for food, receivers being compelled to accept and pay for them, having no redress under present laws,

(4) And Whereas the marketing of such rotten, decomposed, tainted and bad eggs is a menace to the public health, an impediment to trade, and an unnecessary source of tremendous loss to all concerned in the handling of them, more especially to the producer, owing to the very much lower prices that dealers pay to the farmers to protect themselves against this loss,

(5) And Whereas it is both expedient and necessary that legislation similar to what other countries have enacted shall become effective in Canada in order to

save those interested from inconvenience and financial loss, also to protect the public health and in addition to increase the profitableness of the industry;

"Therefore be it resolved, that we, the producers here assembled at the Fat Stock show, Guelph, petition the Government to enact such legislation as is necessary in regard to this question, and to pass a law prohibiting the sale of eggs that are rotten, decomposed, tainted and otherwise unfit for food, and further that a copy of this resolution be sent to the Honorable Minister of Agriculture, also to our representative Members of Parliament, urging them to use their good offices to further legislation along these lines."

Mr. Gunn's motion, was seconded by one of the gentlemen present, who said: I think the Government could not do a better thing than put the Act in force. We have acts controlling the sale of fruit and other things, and I do not see why we cannot have an act controlling the sale of bad eggs. I have been over the Province and have visited a great many grocery stores handling eggs. Now, we know our Province is pretty well supplied with incubators, and when you realize the amount of eggs that go in our grocery store, a great many of which are partially hatched, it is no wonder that Gunn's are wanting legislation along these lines. For that reason I would second the motion.

Mr. Baldwin: Mr. Gunn ended his remarks by moving this resolution. We should bring that to a head. You understand what the proposition is. It is in order to back up what we believe to be in the interest of the farmer, to obtain legislation of this kind making it criminal to sell that which is not fit for human food. Knowing the influence it must have on the Government, there is no doubt we cannot get the Government to introduce a statute of this kind unless they feel there is some substantial backing behind it, and I do not know that there could be a better demonstration of that backing than what we would get at a meeting of this kind at the Guelph Winter Fair.

Mr. P. White: As a producer of poultry, and as one engaged somewhat in farming, I am utterly and unalterably opposed to the passing of the resolution. If there is no other way to increase the quality of the poultry in this country than by making criminals of the farmers, then I think perhaps the poultry industry had better stay where it is. It has not been necessary to do this in Denmark or any other countries. As Mr. Hare, who is going to speak in a moment, will tell you there is no law of that kind enforced in any of these countries which have made poultry a success and which are making it a great business and part of the national life of the country. It is a very easy and simple thing to say that the blame of this thing rests upon the farmer. One gentleman who spoke on the resolution lays the blame for the greater part of it on the fact that the farmer brings his incubator eggs into the stores and sells them there. I want to tell you that is not the fact at all, because not one farmer in seven hundred who is producing eggs in this country has an incubator. And, more than that, the same remarks apply to fruit that have been applied to eggs. I think Mr. Hare will be able to demonstrate to you to a certainty that it would be far better, if as a matter of fact, the fruit law had not been passed in that way. But a co-operative association formed, so that the people in that association would see the benefit to be derived from producing only an article of that kind which the co-operative system, has taught the people to produce in Denmark, Belgium, France and even poor benighted Russia and many other countries which I could name. If that were done it would be better than placing a statute of this kind on the law because some states of the American Union had seen fit to do so.

One in the Audience: There are very few amongst the farming class who

would knowingly take eggs from an incubator and sell them to the grocer, and while we have to admit there may be an occasional man of that kind, it is probably not as well to go to the trouble of putting on the Statute Books a law for that man. I think in time he will drop that for methods that are less troublesome and more honorable. The Co-operative Association, I think, as mentioned by the gentleman behind is one of the best helps we can have.

MR. BALDWIN: I think it is an unfortunate thing that Mr. White should assume the charge is made against the farmers as a class. It is not so, except in so far as they have to do with the marketing of these eggs. The charge can be brought just as strongly against dealers who buy eggs when they are cheap, and hold them to sell them when they are dear, and hold the eggs under conditions that undoubtedly render them unfit for human food.

MR. WHITE: The difference is that that man has the means at his disposal of ascertaining whether they are fit for food or not, and the farmer has not these means at his disposal nor the time to do it.

MR. GILBERT: I belong to the Experimental Farm, Ottawa, and I always take a great delight in going among the farmers and attending farmer's meetings. Now, Mr. Chairman, we are on the eve of committing a very great and very grave mistake. We are not giving this very serious and important matter the consideration it is entitled to. Mr. Gunn is absolutely and strictly correct and so is Mr. White, but what the farmers want on this very important point is instruction. It is my business to tell you why and where the bad eggs come from. I haven't time now, but I can tell you that that man is no friend of the farmers who allows them to commit mistakes without telling them how to avoid them. The mistake occurs in the nests. As a matter of fact some of the eggs are partially hatched before they leave the farmer's hands and he doesn't know it. There is not a farmer I know of that has wittingly and knowingly placed a decayed or partly decayed egg on the market. No, the men I have met are God-fearing and reputable citizens, and would not do any such mean contemptible thing as to sell a bad egg knowing it to be such. It is caused by the hens sitting on the same nest one after another. As a matter of fact the hatching process begins before the egg leaves the oviduct. We must begin at the very nest, we must begin at the farmer who is the producer. What is the remedy? Have no male birds, have no germination, have the dealers sell none but non-fertilized eggs, and have them sold as quickly after they are collected as possible. You farmers are the parties of the first part, and many of you know nothing at all about the fact that the eggs are partially hatched under the present conditions before they leave your hands.

MR. BALDWIN: I would like to ask Mr. White how long his system of education would take to save that $2,000,000? I think it would take a century. Under Mr. Gunn's system it would be done in about a year.

MR. WHITE. My system is not a system of education it is a system of co-operation.

MR. BALDWIN: This is a very large question, and if it is open to criticism, as of course it is, we might get into a discussion which would take a whole evening. I would suggest that we hear the other gentleman who is going to speak on co-operation. However, I think in all fairness to Mr. Gunn, as mover of the resolution, he might have an opportunity to make some reply to the criticism that has been made and then we will probably let the matter drop for the time being.

MR. GUNN: I am very pleased that I was the means of causing this discussion to take place. Mr. White is quite right. There is only one way we are going to be able to tell the farmer how to do his work and that is by co-operation. It is all

very well for some people to stand up and say "co-operation," but it is another thing to go out and spend the dollars and have co-operation. We spent fifty to seventy-five dollars a week to educate the farmers in regard to co-operation. When they had bad eggs we sent them back to them again, and they thanked us, as everyone in the Peterboro section will tell you, and they will vote for the resolution I have put forward. The only reason this resolution would not carry to-night is simply because the people who have been in touch with this thing do not know what it means for them. I may say I had the pleasure of listening to two speakers, one Professor Lowen of Queen's University, the other Mr. McGill, the Chief Analyst at Ottawa. These gentlemen have given a great deal of study to the question of food legislation and food products, and they both admitted that the seat of the trouble in this connection lies right with the farmers, the greater portion of it, and I am quite prepared to spend any amount of money to educate the farmers to properly market their product. One of the largest egg dealers just the other day made a statement in a public meeting that they buried every day what would pay for two or three of the best farms in Canada.

Mr Baldwin: There is no doubt at all that the question of the producer packing and sending to market bad eggs for our table works two ways. The man who once gets a stale egg on the breakfast table is apt to cut off eggs for perhaps six months. If on the other hand he gets an absolutely good fresh egg his appetite is whetted. In order to enable us to get a better idea of the subject before us, it is with much pleasure I call on Mr. Hare to speak on "Co-operation."

CO-OPERATIVE EGG CIRCLES.

J. H. Hare, District Representative, Whitby.

Farm Conditions. No branch of farm work to my mind is in such an unprofitable and neglected condition as the poultry. I have had occasion to observe the condition of flocks on many farms during the past summer, and it was indeed discouraging to find that the poultry on the average farm was not considered of sufficient importance to warrant giving it anything like proper attention. It most certainly does not receive attention equal to that given to other lines of stock.

The stock consists largely of a mixture of several breeds; no particular effort is being made to increase laying in the flock or to establish an egg-laying strain. Few farmers secure eggs during the winter months when they are scarce and prices are high. To secure a male bird for breeding purposes that is from a noted egg-laying strain is an unthought of idea. Male birds are allowed to mingle with the flock during the whole of the summer season, which, if avoided, would entirely amend the rotten egg situation and make unnecessary the recently proposed legislation. Disease (largely tuberculosis) is prevalent to an astonishing degree. The fowl of the farm is looked upon by the average farmer from a commercial or revenue-making standpoint as not of sufficient importance to warrant his giving any attention to it; consequently this branch of the farm work is left largely to the women of the household to make what they can out of it.

"There seems to be an inherent tendency in our farmers to go out after the things that loom up big in the mind's eye. In doing this, the more trivial things, which are as important in the long run, are often passed by. The bigger things in agriculture, such as horse-raising, cattle-raising, etc., receive his attention in

preference to what are usually considered small side lines—such as poultry." But when one stops to consider the results of some of the experimental work as is being carried on by Prof. Graham, of Guelph, who is, in his work, endeavoring to imitate farm conditions, he is at once struck with the large profits secured from a very small initial capital invested. For instance, from one pen of White Leghorn pullets a net profit for nine months of $1.53 per bird was made. Another pen of 23 Barred Rocks made during a period of eleven months a net gain per bird of $2.34. From still another lot of Rocks $2.66 came from each bird as net receipts. I doubt very much if any farmer can show as good results from any other line of stock.

Condition from Market Standpoint. We are told by produce merchants that there is a total loss of eggs shipped to them of from 15 to 20 per cent. This affects the trade in several ways. There is first the PRODUCER, who suffers probably most of all. Commission men who have been in the business for years know what shrinkage to count on at certain seasons of the year, and a price is paid the producer which is sufficiently low to cover at least a large proportion of that shrinkage. Again, the useless proportion of these shipments not only cost the HANDLERS the expense of transportation, but a very heavy expense is also incurred by way of the employment of expert candlers to cull out the bad and grade the remainder. The CONSUMER, of course, suffers as well, by paying a higher price than he would have been called upon to pay had there been no shrinkage. Besides this direct loss of from 15 to 20 per cent. there is a loss which is less tangible, but none the less real; that is the loss due to CURTAILED CONSUMPTION. People do not like to buy bad eggs, and if such are served to them they are inclined next time to buy something else. This cuts down the demand and lowers the price. Any city egg dealer realizes how quickly the buying public adapt their consumption to the quality of the product. To illustrate this, I have simply to refer to the case of the consumption of eggs in the Windsor Hotel, Montreal, which has doubled since they have commenced to use the strictly fresh and new laid eggs secured from the egg circles of Peterboro' and Ontario counties.

Cause of Loss. One of the direct causes of this condition is the "FLAT PRICE" system of paying for this produce. The question of freshness or quality does not seem to count, therefore, there is no incentive to men who can produce superior eggs. As a result, various grades of eggs enter the trade; many are stale or dirty, and not a few are absolutely rotten and unfit for consumption. This loss is entirely uncalled for and can easily be averted. As a remedy, I shall simply refer to the Egg Circle movement that is now in progress in Peterboro and Ontario counties. This proposition was held out to the producers in these districts by a Montreal firm—that if they would club together and ship to them a uniform lot of clean and non-fertilized eggs regularly twice a week in summer and once a week during winter months they would receive a price that was at that time 2 cents above the prevailing local market price. The result was surprising. Previous to this, practically no premium was given for eggs of better than average quality. This was generally accepted as being unfair to those who took pains to place this product upon the market in first-class condition. According to the proposed scheme a fair discrimination was to be made. Furthermore, the development of a reliable reputation was anticipated. Co-operative egg circles were formed—first in Peterboro district and then in Ontario county. Arrangements were made for gathering, and shipments have since been made regularly twice a week until now, after a five months' thorough trial, it is generally acknowledged as having passed the experimental stage and is strongly supported by many in the district who have any quan-

tity of this product for sale. The circle members, since organization, have realized an advantage over local market prices of from 2 to 6 cents per dozen. They are thus induced to give their poultry and eggs the attention necessary to supply a first class article.

How Circles are Organized and Managed. A local grange in the vicinity of Beaverton, in North Ontario, had been discussing, among other things, the subject of co-operation. About the 4th July Mr. Brown, representing the Gunn-Langlois firm of Montreal was invited to give the Grange some light upon this co-operative scheme. The meeting was held, and, after thoroughly discussing the scheme, this proposition was made to them:

1st. After organization they arrange themselves in small groups of four or five farmers each, and the members of each group take their eggs twice a week to a house located the most convenient to a fixed route.

2nd. Send nothing but strictly fresh eggs not more than four days old.

3rd. Keep the small, very large and ill-shaped eggs at home.

4th. Neatly stamp their eggs, so that if, after being candled, any were found to be stale they could be traced to the producer, and for these they would be discredited.

5th. Keep eggs cool and dry.

6th. Keep male birds out of the flock after the breeding season.

If this was agreeable, the firm would send out a rig to collect the eggs, supply boxes and pay the farmers at that time 20 cents a dozen, which was 3 cents above the local market price.

Two circles were organized at once, each with its President, Secretary, and five directors. Their numbers were few at the commencement, but gradually increased until now there is a total membership in the two circles of 75 farmers.

We made rather a late start in Ontario county. Many flocks had done their best and eggs were falling off. This hindered our rapid advancement, but we are not sorry that a start had been made, because now the people recognize that the experimental stage has passed, and as soon as egg production commences in the early spring support will be much more general.

Results. Farmers have realized, as previously stated, from 2 to 6 cents per dozen more for their eggs than if they had taken them to a local market. One woman, who was a little outside of the range of the circle, claimed that if she had had the advantage of the extra price the circle people were getting it would have meant $25 to her during that season. A remarkable unsatisfied demand has been created for circle eggs. Consumption has markedly increased where circle eggs have been used. The elimination of unnecessary middlemen has resulted in benefit both to consumer and producer. Shrinkage in handling has been reduced to a minimum—much also to the advantage of both the producer and consumer. Satisfaction is so general that one is surprised at the late adoption of this system.

There must come a change from the old systems of marketing this commodity before farmers can be expected to practise the recognized up-to-date methods. The organization of egg circles seems to be just what is needed. Results thus far, taking them from an educational standpoint, prove the merits of the system. It is really remarkable the enthusiasm which has already been created as a result of the movement. The farmers are now giving their poultry more consideration. Plans are being made to improve the quarters of the flock, to secure a better laying strain, and increase the size of the flock. On my last visit two men in one circle approached me and requested that I secure for them plans for an up-to-date poultry house, and also instructions as to how to properly manage and

feed their birds this winter in order to get maximum returns. Let it be understood that this is by no means an experiment in this country. This same co-operative system of handling and marketing eggs and poultry is quite generally adopted in Denmark, Sweden, Ireland and South Australia, and as a result the poultry industry in each of these countries has made tremendous advancement. Production has been greatly increased and the reputation of their poultry produce has been wonderfully improved. It is, therefore, a most natural thing for us to adopt their system.

We might continue to preach improved methods in poultry-producing for a dozen years and not accomplish as much for both farmers and consumers as in one year by the organization of poultry circles.

PETER WHITE, Pembroke: I would like to ask Mr. Hare if he has considered what the effect would be in those circles if those eggs were sold direct to the Windsor Hotel, Montreal, or elsewhere.

Mr. HARE: Independence would be the result of that policy, and that is what we are aiming at. I am working in the interests of the farmers, and I hope some day we will have these circles perfectly independent of any concern. This work in my estimation should be carried on by the Government, because it is essentially educational. The existing circumstances are these: There is a great deal of educational work to do, and it will be some time before the circles are on a profitable basis. The farmers must learn how to produce strictly fresh and new laid eggs, and it is necessary for somebody, either a firm like Gunn-Langlois or the Government to advance some money to carry on this educational work which is absolutely necessary as a preliminary effort in the movement.

Q.—Are not the circles tied up in any way to any firm to-day?

Mr. HARE: No; they are at liberty to sell their produce to anybody, and they will sell their produce to the firm or the individual who will give them the highest price.

Q.—You believe when this co-operative business reaches a magnitude the farmers themselves could employ a man and put him on the markets to sell these eggs direct, it would be better than handling through a middleman?

Mr. HARE: I do; yes. And we will bring it to that just as soon as possible. I hope before very long we may have something like a country organization where we will have all of the circles in the county organization into one collective circle, and have one manager to look after those circles and look up and study markets and sell the eggs.

Q.—Have the Farmers' Associations adopted a brand of their own?

Mr. HARE: No, they have not as yet, but that will come in time.

Mr. BALDWIN: Do they stamp their name on the eggs?

Mr. HARE: Gunn-Langlois have supplied the stamp so far, which consists of two small numbers, one number above, referring to the number of the circle, and the number below referring to the number of the farmer in the circle.

Q.—Their names are not recognized at all?

Mr. HARE: So far it has not been. We have not as yet what one might call a truly co-operative concern, but I cannot see how we are going to work it in any other way. We have not been able to work it independently as yet. While we enjoy the liberal assistance of the Gunn-Langlois firm it seems reasonable that there should be no objection taken to their stamp being used.

Q.—Could you not brand your eggs and sell them to Gunn's people just the same as you are selling now, only have something that would establish the quality of your eggs and give you a market?

Mr. HARE: That is a new subject; that idea has not been discussed with this firm, and I don't know just exactly what their attitude would be toward it.

Mr. GUNN: I might say that at the present time, owing to the want of education on the part of the farmer, we have to have a man in the section that will take the eggs, and before our name is put on them he has got to say they are right. We went into this thing on an educational basis more than anything else; we were anxious to get the farmers to grow more poultry and produce more eggs. It is quite true Denmark has made a great success of the co-operative movement, and they have societies which are selling eggs. I may say every egg that is marketed in Denmark contains the letter of the farmer, and if the eggs are bad they are sent back to him. If this system is adopted throughout Canada we will not require any law, but until this is done something should be done to see that proper eggs are marketed.

Q.—Doesn't the farmer stamp the eggs "Gunn" before they leave his place?

Mr. HARE: Gunn is the buyer and supplies the stamps: "G" is on the stamp, which stands for Gunn.

Q.—It would be more to the advantage of your society if they were branded as the Peterboro Co-operative Society's eggs.

Mr. HARE: Decidedly so, but preliminary steps have to be taken first before it can be put on this basis.

Prof. GRAHAM: We have a certain trade in Toronto and we use the O.A.C. brand, and we get a price for those eggs; we get the same price from other people in other towns where they will not allow us to use our brand. They don't want the eggs with our brand on them. We candle the eggs, and do all the same tricks with them so far as keeping them clean and shipping them are concerned, and the fellow on the other end can put on any brand he likes. He brands them with his own brand, I expect. But where there is only one middleman between us and the consumer we use our own brand. One man says, you brand your eggs O.A.C. and I will give you four cents apiece; the other fellow says, if you leave off your brand I will give you four cents In both cases I know they are branded before they reach the consumer.

Mr. BALDWIN: There is no doubt about it that the method of getting your eggs to the consumer with the brand on, the brand being a brand that will identify the egg with the producer, will be a great step forward, and it undoubtedly gives the consumer great confidence to have an egg come before him on the breakfast table with a brand on it, so that if there is anything wrong he knows exactly who he can blame, but you get a whole lot of miscellaneous eggs with nothing to identify them and you are open to great risk.

TRAINING HORSES.

DR. F. C. GRENSIDE, V.S., GUELPH.

This, the subject of my paper chosen by the committee, is a comprehensive one, as it would, if taken literally, include training for speed; but, as I take it, in a gathering of this sort, such an inclusion would be out of place. Leaving out the question of speed it is still a large order, so that I can only touch upon some of the principles which should guide us in the education of the horse, and incidentally refer to some of the more important details in carrying it out.

The old term of "breaking," used synonymously with training and education of horses, is in a measure objectionable, as it appears to indicate the exercise of too great a degree of force in the process of training. Although harsh measures may be necessary under some circumstances, the guiding principle should be, rather *a leading of the colt into compliance with our wills by artifice rather than by force.*

Some trainers approach the task in an aggressive mood prepared and expecting to use harsh measures, while others, and we think the more successful ones endeavor to accomplish their object by the exercise of strategy and only resorting to force when absolutely necessary.

Another fundamental principle that should guide us in the training of a colt is, to never place the animal in a position to do wrong, for if he succeeds in acting in opposition to the will of his trainer he is apt to repeat the act, if an opportunity is afforded. As tending to illustrate the carrying out of the principles so far enunciated let us take the example of a shy, nervous, high-spirited colt, easily frightened, and inclined to turn around sharply, to shy badly, and rear or plunge, if restrained it is courting disaster to subject such an animal to conditions calculated to frighten him, until his mouth is made so you can control him. He should also have the sharp edge taken off his spirits, by sufficient work in a quiet place, and he should be hitched alongside of a tractable, well-trained horse to give him confidence, and assist in controlling him when he is first subjected to sights and sounds likely to disturb him. Every time he is hitched with such a horse his side should be changed, so as to teach him to go, and carry his head straight and get used to the pole on either side of him. Such treatment will soon get him ready for single hitching, without danger.

Never hitch a colt single without the use of a kicking-strap until he has had a few weeks' experience, for if he once kicks successfully he will not forget it. Don't tie up a colt in a place so he can pull back, and become a halter puller. Tie him with a strong halter and tie-rope and with something to back against, so he can't pull back.

These are a few simple examples of the manner in which training can be carried out upon the principles enunciated. It is much more trouble, and not nearly so satisfactory, to have to try and correct faults than it is to avoid their development. The exercise of force is sometimes valuable in very nervous, headstrong horses, but never try it unless you are sure of being able to attain your ends. For instance some horses are very nervous about being saddled and could easily be taught to be buckers. This tendency is not vice, it is nervousness; and by putting a twitch on for ten minutes while saddling and putting a man on the back and leading about with the twitch, the nervousness can be overcome while such horses get used to the pressure on the back. I have seen this plan save a lot of trouble and avoid bad habits being learned.

It is not necessary to go into any more details in illustrating the principles laid down, for they have to be left to the common sense, judgment, and aptitude of those who do the handling.

We now come to an extremely important point in the education of a colt, but it is one very imperfectly understood, and one in connection with which great errors are made, much suffering caused, and *results the failure in the attainments of which leads to loss and disappointment.* I refer to bitting, or the cultivation of the mouth. This organ can undoubtedly be considered as exercising the most important influence in contributing to the control of a horse.

It is not only, however, in influencing control that it exercises its very important function, but also in balancing a horse, in steadying him, in promoting a graceful carriage of the head and neck, in increasing action, and in regulating speed. In order that we can attain all these things through the medium of the mouth that organ has got to be cultivated until it becomes responsive. By a responsive mouth is meant one that readily yields to the pressure of the bit brought about by the tension or traction of the reins in the hands of the driver or rider.

The mouth responds, whether the pressure is intended to restrain, guide, steady, collect, or alter the carriage of the head and neck.

The cultivation of the mouth being of such prime importance, in contributing to the reliability, comfort in using, style, speed, balance and action of a horse, it behooves the trainer to give it special attention, in handling a colt, and remember that in the process of bitting, it is easily spoiled, and that defects of it are hard to remedy.

There is a marked analogy between teaching a child to write and making a colt's mouth. In both instances you are cultivating muscles and nerves. In one case you are teaching the muscles and nerves of the hand and arm to make smooth lines easily in forming letters, in the other you are educating the muscles and nerves of the head and neck to respond to pressure. Both processes take time, and repeated practice, and the mistake many handlers of horses make is that there is no systematic plan of carrying out the training of the mouth. The bit is usually put in the mouth, and the colt driven before he understands anything about pressure from it, and what it means.

By following out this lack of method many bad habits may result, particularly in sensitive, nervous horses, who readily chafe under any discomfort.

The experience of repeated irritation in connection with the mouth leads to such bad habits as putting the tongue over the bit, tongue lolling, drawing the tongue up in the mouth, going with the mouth open, crossing the jaws, side lining, pulling, unsteady carriage of the head, carrying the head too high or too low, going cornerwise, carrying the head side-ways, hitching, interfering, mixing the gait, rearing, plunging, and running away.

In order that we can make a horse's mouth responsive and steady, it is necessary to get the tongue to stand a reasonable amount of pressure from the bit, as this organ protects the bars of the lower jaw from undue pressure and injury.

In cultivating the mouth the first step is to simply put a bit in it for a few days, to get it used to its presence, then by slow degrees exert increasing pressure on the tongue, by the use of reins buckled to the bit, and then buckled back on either side to a surcingle. The mistake is frequently made of having these reins too short at first, and thereby exerting too much pressure on the tongue before it becomes inured to it. The reins at first should only be sufficiently tight, so that when the colt holds its head in its natural position the slightest possible amount of pressure is brought to bear on the tongue, but when he sticks his nose out he feels the increased pressure, and the restraining influence of the bit, and he yields to it. Constant repetition of this results in frequent yielding, thus cultivating responsiveness, and at the same time habituating the tongue to pressure.

Every day or so the reins can be shortened slightly, thus increasing pressure by slow degrees, but never sufficiently to tire the nerves and muscles, so that the colt will fight it or hang on it. If he drops his head too low, use a bearing rein, in addition to the alter reins, and use a separate bit for the bearing rein.

A couple of weeks of this sort of treatment in a box stall will be a good start in making the mouth responsive. Leading the colt about or lunging him with

the bitting tackle on will still further promote the education of the mouth, but you cannot finish the making of the mouth in this way, it has to be done in harness, or in the saddle. A great deal depends upon the delicacy of touch of the driver or rider of a colt, as to the progress the mouth makes in responsiveness. The hand should be light but steady, the mouth should always be felt, and the colt kept collected, as well as the progress of his education will permit. Loose rein drivers are an abomination, as they teach the mouth nothing, and are apt to spoil a horse's gait. Hitching, forging, and bad carriage are promoted by loose rein drivers.

The position of the bit in the mouth is of much moment. It should not be too high or too low, and the trainer has to be guided by the manner in which a horse faces it, in determining its proper location. If the mouth does not yield to the pressure of the bit, lower it, and put it down as low as possible, in order that the animal will still face it with a reasonable degree of firmness, and not put his tongue over it. If he shows evidence of doing this and keeps "behind the bit," raise it. Much harm is done by the very common practice of placing the bit too high in the mouth. When it is too high leverage is lost, and you cannot bend the head upon the neck and get response from pressure. Other untoward results are that the lips are curled up, the angles of the mouth frequently made sore, and the cheeks are pressed against the anterior grinders, causing abrasions and excoriations of the lining of the cheek. Luggers, sideliners, tongue lollers, open mouths, sore mouths, dry mouths, crossed jaws are encouraged by having the bit too high in the mouth.

Another important point in training is giving steady work. Leaving an interval of two or three days between lessons is a very bad plan, as the sharp edge has to be kept off a horse's spirits to keep him teachable. A colt never learns anything but bad habits when he is suffering from exuberance of spirits. Give a lesson in some way every day, and two lessons a day are better than one. It is not necessary to jade a colt, but keep him steadily at it. Two lessons of half an hour are better than one of an hour's duration.

Try to avoid making the mouth sore by using suitable bits in a rational way. As soon as the mouth becomes sore no progress is made. It is better to leave the bit out of the mouth for a few days and lunge the colt to keep him from getting too high spirited.

Before closing, I wish to urge exhibitors of horses to get their colts trained to lead well before putting them into the show-ring in classes in which they have to be shown on the rein.

It is very annoying and embarrassing to judges to have to pass upon colts that cannot show the character of their action on account of awkwardness in leading, and it often militates against their success. It is apparent to observers of awkward exhibitions of leading in the show ring, that the handler of the colt often needs as much training as his charge.

Ten or fifteen minutes spent daily for ten days in leading lessons will usually get a colt to go handily.

For ordinary purposes it is not necessary to use the long rein of the expert nagsman as when showing a Hackney, but the rein may be held about a foot from the head, and loosely, but just nagging sufficiently to keep the head in position and regulate the pace.

The leader should run along and avoid looking at his charge, for if he looks at him he will go sideways, if possible, or not lead up. The off side of the horse should be alongside of a wall or fence to make him go straight; a lane is a good place as the off side can be kept towards the fence going both ways.

A run of fifty to seventy-five yards is ample and a man should be at either end to stir the colt up, with the whip, so as to make him lead up freely. If nobody is available for that purpose, the nagsman can carry a long, straight whip in his left hand, with the point of it directed towards the hocks.

Q.—How can you break a horse that acquires the habit of halter breaking or pulling back when tied in the stall?

Dr. Grenside: There is a plan that has been practised a good deal, and I think fairly successfully. Take a three quarter inch rope about twenty feet long. Double it and put the loop under the tail, and pass the ends over the back, crossing them over the loins, then run one end down either side, and pass them through between the front legs, and through the ring of the halter, tying them to something that won't give away if the horse pulls back. It is found that the pressure coming on the root of the tail prevents the recurrence of the attempt many times.

Q.—Is it good practice when driving a colt to warm him up much?

Dr. Grenside: It is inadvisable to warm a colt that is in process of training more than necessary, as some horses become excited when warm and a soft, green colt is apt to take cold after warming up much.

Q.—Do you recommend an overcheck or a side-line bearing rein?

Dr. Grenside: In driving for speed it is usually necessary to use an overcheck to steady a horse, but for ordinary purposes I think a side rein better, and that overdraws are too much used. If you get a horse's nose stuck out, which is the tendency of an overcheck, you can't very well cultivate responsiveness of the mouth, as in this position the bit becomes pulled up in the mouth and presses the checks against the front grinders.

Q.—If you have a colt with a tendency to kick what would you do?

Dr. Grenside: Always use a kicking-strap.

Q.—Say in case of a yearling, when you go about him to groom him.

Dr. Grenside: It makes a good deal of difference how you go about him. It is most necessary to try and get his confidence as much as possible. Kicking is the result of nervousness. If you get his confidence and handle him, in a variety of ways, you will reassure him, and overcome the tendency to some extent. By rubbing his legs a good deal and handling him frequently you will get his confidence.

Q.—Do you think it is well to press firmly when you put your hands on nervous colts?

Dr. Grenside: Yes. I think it is important to press firmly, as in this way you are more apt to overcome the ticklishness.

Q.—What course would you take to stop a horse from kicking?

Dr.. Grenside: I would give him plenty of steady work, and not too much feed. Use a kicking-strap on him until he ceases to show any inclination to kick. Check him up pretty well with an overcheck.

Q.—What would you do to overcome the habit of balking?

Dr. Grenside: Of course there is a predisposition in some horses. The nature of the nervous condition that constitutes the predisposition to balk is not exactly understood, but there is no doubt that some horses have it, and that it is hereditary, too. In a predisposed subject one has to be particularly careful. There is a great deal in the way you hitch a horse, and the horse you hitch him with. He should be hitched with a tractable horse, with a nice mouth and that is not readily excited. Get his mouth in good shape, and see that he doesn't suffer

any discomfort from it. Don't use him harshly or irritate him, or give him too much to draw.

Q.—I had a colt last spring and he made an effort to run away. I had a firm hold on him and I imagine I hurt his mouth. Is it possible that the lunge he made, causing me to pull hard on his mouth, would hurt the muscles of his mouth?

DR. GRENSIDE: Most likely the bit hurt the bars of the mouth. The bones which form the branches of the jaw, and constitute the bars, are frequently bruised by the bit and remain sore for a long time. This will give rise to a disinclination to face the bit. Better have the horse's mouth examined by a veterinarian to see what condition it is in. After the soreness disappears use an easy bit. A very common mistake and cause of injury to the mouth is placing the bit too high in the mouth. This error leads to pulling and injury to the mouth, for when the bit is too high leverage is lost or lessened and the tongue and bars injured. It must not be too low or the horse won't face it and he will be apt to put his tongue over it. Just have it low enough so he will face it firmly and still respond to pressure. A separate bit should be used for bearing-rein from that to which reins are attached. This is a very important point, for if the bearing-rein is attached to the driving bit the check pulls it up in the mouth out of position.

Q.—Can you do anything to overcome switching?

DR. GRENSIDE: Is it a mare or a gelding?

Q.—A mare.

DR. GRENSIDE: Different things have been tried for switching, such as removal of ovaries or Clitoris, or nicking the tail are sometimes successful in overcoming this.

Q.—Do you think tieing the tail will cure the habit?

DR. GRENSIDE: I have seen that tried, but it doesn't look very well.

THE DIFFERENT TYPES OF HORSES AND THEIR MARKET VALUES.

J HERBERT SMITH, MANAGER HORSE EXCHANGE, UNION STOCK YARDS, TORONTO.

I have been invited to make a few remarks on the different types of horses and their market values. This is a very broad subject, as broad as it is long, and I feel very much like the young minister who went to take charge of a church in a small town in which there were only two churches, the other one being in charge of an old man. Shortly after the young man got established the old minister found his congregation were all leaving him and attending the young man's church. The two ministers met one day and the elder said to the younger, "Look here, how is it all my congregation are leaving me and attending your church?" The young man said, "Well, the only reason I can see is that when you are through your sermon on Sunday you busy yourself in your study all the rest of the week and make all kinds of notes, and all the time you are doing this the devil is looking over your shoulder and every time you make a note he goes out and spoils it, but when I get up to preach the devil himself or no one else knows what I am going to say." Now, while I feel like the young minister I am acting like the old one in the fact that I have made a few notes.

I am not here as a breeder, because I never even bred a saw-horse, but as a representative of the horse, as you might say, when he is a finished product, when

he is ready to leave his happy home and start out on his career as a Worker, Driver or Race Horse. I represent the intermediate or commission man. I would sooner my remarks had been on the "Conditions and Requirements of the Horse Market."

Before mentioning anything about values I would like to refer to a few figures relative to the number of horses bred and sold in Canada and the United States.

Some years ago Thos. A. Edison, the great electrician, said in an interview that we were slowly but surely drifting to a horseless age, and that in a few years the only horse known would be a stuffed specimen in a museum of natural history. I see by the morning papers of to-day that the Ontario Government is granting $400,000 to build a museum. I suppose this is to put the balance of our horses in, but would it not be wise if they were giving this amount to improve the horse industry of Ontario? Just how far Mr. Edison's prediction fell off the mark can be proved by conditions as they are to-day. With your permission I will read a few figures from *Bit and Spur* for July this year regarding the number of horses in the United States and a few other countries.

It should be very gratifying to horse breeders to know that the United States leads all the nations of the earth, with the single exception of Russia, in the horse breeding industry. These two countries possess the enormous number of 51,769,165 horses. Of this number Russia is credited with 30,729,165, and the United States with 21,040,000, while Germany is at the head of the other European nations with 4,345,000. Austria-Hungary come next with 4,264,571; France has 3,094,000 and Great Britain 2,151,371. These immense numbers include horses of all breeds, and considering that Mexico, South America, many other European countries, the vast continent of Asia, Turkey, Arabia, Japan, Australia, Canada, and other places are not included and in some of which a census of horses is impossible to ascertain, the horse, notwithstanding his modern rival, the automobile, looks as if he was well able to take care of himself and perpetuate his breed for many a long day.

Heavy draught horses, as compared with the Army Remount question is a very different story. Clydesdales are highly favored by the people in the newly settled areas of Canada, and last year more horses of this breed were imported from Scotland and England than at any previous time. Clydesdales as well as Shires are becoming popular in different parts of the United States and the best stallions of these breeds are being imported. Suffolks are being exploited in certain localities, and Percherons and Belgians were never in such demand. With all the modern machinery now being manufactured for the farmer's use, none has been capable of filling the place of the heavy draught horse, and it is very doubtful that it ever will, until every available acre of unopened land has been brought under cultivation, and that will be many a long day. To sum up horse conditions in the United States, it may be stated that from 1900 to 1905 the number of horses increased 3,520,000, and from 1905 to 1910 the increase was 3,982,000, and there are at this moment more horses in the country than there has ever been, and prices are the highest on record.

An interesting fact that I have been taking note of in my horse career is this. I think the Ontario breeders and farmers, as a community, as far back as you want to go, are the best judges of quality and conformation of all classes of horses that you will find in any country you wish to visit, and this is proved by the fact that when they make up their minds they can take a string of horses to the United States anywhere, or even to England, and come back with the largest proportion of prizes.

The value of horses in the Dominion is greater than that of all other farm live stock combined. The average value of horses, three years old and over, for the entire country is $150.00. In Manitoba the average value of horses three years and over is $187.00, in Saskatchewan, $180.00; British Columbia, $165.00, and Alberta, $150.00, but I think the British Columbia values are just a little low, as they in every case buy the best. I am sorry to tell you, gentlemen, that we are slowly but surely losing one of our most valuable assets in Ontario every day, as you will see by the figures which I am about to read from the Ontario Agricultural Blue Books for 1909 and 1910. For the last ten years it shows that horses increased 10,000 a year in Ontario, and the last five years 11,000 a year. In 1909 the number of horses on hand in Ontario was 728,308. Of these, 76,461 were sold, but up to July 1st this year, 1910, we had only 724,000 and nearly 98,000 sold, so putting the shortage with the number sold, it would show about 102,000 short in Ontario for this year, and I will venture to say 75 per cent of these left Ontario for other provinces. Of course these are only approximate figures, but are secured by the Ontario Government in the regular way, but it gives some idea of where we stand, and how rapidly we are going back. The commercial editor of a Winnipeg paper told me that some 27,000 horses passed through Winnipeg the first three months of this year. Every province in the Dominion is depending on Ontario for its supply of horses. I am receiving letters every day from different provinces all the way from British Columbia to the Island of Newfoundland, asking for prices of horses, but since prices have gone so high in Ontario the answer frequently comes back, prices too high, but at the same time numbers of car loads are being shipped in every direction from Ontario every week.

There is a market in Ontario now for any type of a horse at good round figures, but the trouble is to get the quality required. No matter what type you are breeding, aim to get the best, and don't attempt to breed from scrub stallions or mares just because it is a little cheaper. So many farmers in looking for a cheap horse to help out some place say to me, "Well, I would prefer a mare and if anything happens I can breed her." This is the biggest mistake you can make. For instance, coming up here on the train this morning a gentleman told me that a farmer who lives across the road from him has two registered mares, and he has raised sixteen colts in the last ten years, and has sold them all at an average, as two years old, for $200 each, and the mares at the same time have done all the work on a hundred acre farm. He got $3,200 in ten years from colts, and still has the mares. This goes to show what returns breeding the best will give.

There is a splendid market to-day, and there will be for many years, for heavy draught youngsters at a good price, whether bred from imported or province bred stock. There are about four classes of horses that are always in top demand. The heavy draught, the agricultural horse, the general purpose, express or delivery pattern for city use, and the carriage or combination horse.

Everyone interested in horses knows these days that heavy draughts are in big demand. Horses weighing from 1,600 pounds up with lots of quality, are selling on the market to-day for $250 to $300 per head for the best quality, and there is always a special demand for this class (outside of the lumbering industry) from British Columbia, for I understand they use a low wheel truck that will carry from four to six tons, and horses can not be too heavy for them providing they are active.

But the greatest demand of all is for the agricultural horse; the nice turned, short coupled, thick ones, with good, flat bone, heads and tails on the right place, and lots of quality, and weighing from 1,300 to 1,500 pounds. This class is

bringing on the market to-day from $200 to $275 each, but everyone is looking for them at about $175 to $225 each.

Here is something I would like some of you breeders or farmers to figure out for me. You raise a steer till he is ready for market at about four years of age. You feed him on the very best, give him all the tit-bits, bring him to market and get from $90 to $110 for him. Then on the other hand you raise a heavy draught colt, as a two-year-old you break him to harness and make him earn his feed from then and turn him out to the straw stack to feed. When someone wants to buy the colt you ask $250 for him. You claim you are making money on the steer, and losing on the horse, so I would like someone to explain this to me. (A voice from the audience) "How about your misfits?" My reply is "Your misfits will bring more than the steer anyway."

The general purpose pattern that is used principally for city express and delivery use is a horse also in constant demand. He is a clean boned fellow, standing from 15.3 to 16.2 hands, weighing from 1,175 to 1,350 pounds; wants to be well mouthed and broken to single and double harness, and with lots of snap. He is bringing on the market to-day from $190 to $250.

The carriage or combination horse is ever in demand, but they are nearly a thing of the past. Ever since the automobile made its appearance breeders apparently thought they would be little used, but today they are in just as big demand as ever. As far as price for the carriage horse goes, there is no set price; it is the individual himself who decides his value. For instance, I have seen a string of six bay geldings standing in a row, each six years old, sound and kind in harness, and there would be a difference of $200 to $500 in their values. A few years ago I have seen English buyers come to Ontario and buy up from six to eight car loads of carriage horses and ship them home for sale and job work. Where is all this class of horse to-day? Where are all the carriage stallions to-day? About four years ago the Ontario Agricultural Department took the stallion question up, appointed a number of inspectors through Ontario who visited every farmer in every part of the province, and took a census of the stallions, which cost some $5,000. This was a right move, but since then nothing has been done.

The great question to-day is how we are going to remedy these conditions. With all deference to our worthy Minister of Agriculture, I think the Government should give substantial assistance in some way to the stallion industry, and not leave the keeping up of a high standard of breeding entirely to private enterprise. I have no definite suggestion as to how this should be done, but think it only fair that they should patronize the importers who, at great expense and risk, have kept on for years importing the best that could be found, and have raised the high standard of breeding for horses in Ontario to what it is to-day by buying from them, if it should come to that, as these men know the requirements of the county. A few of the well-known ones, such as Graham Bros., Hodginson & Tisdale, Graham & Renfrew, Senator Beith, Smith & Richardson, John Bright, John Boag, Hamilton & Hawthorn, Tom Elliott, J. B. Hogate, and a number of others to whom a great deal of credit is due.

Germany, Russia, and a number of other countries spend millions annually in improving the horse industry in their countries. Why cannot some such line be followed out in Ontario? There are lots of townships in Ontario where stallions could be placed to get splendid results. Only this Spring I had a 'phone message from a farmer in Trafalgar Township, asking me if I could send someone with a good heavy horse to their district, and he would guarantee from thirty to fifty mares, as the stallions they had were not good enough quality to breed to.

and I will venture to say, had a good horse stood in that locality he would have got seventy-five mares, and I am told many of the farmers let their mares go over this season for the want of a good horse.

I would suggest that the Government create a standard for the different classes, and have all stallions standing for service inspected and licensed, and order those not fit for service gelded or destroyed. Of course there could be no compulsion in this regard, and the man who did not hold a license would soon get tired and get a better horse, for breeders would not breed their mares to a horse that was not up to the standard, and the poor horse would not get any business and eventually quit. A plan of this kind would soon rid the country of all second and third grade horses. Gentlemen, go to your Representatives in Parliament and get them to bring this matter up in the House, and if they do not, tell them you will not vote for them next election.

What we want now in Ontario is better horses of all classes, heavier horses, and more of them, and at a cheaper price, and let us keep Ontario to the fore as the banner breeding province.

Before closing my remarks there is one more important subject I would like to mention. The Government should establish some measure for keeping down the diseases horses are so subject to, and which are so contagious. Breeders and farmers should be thoroughly instructed on the importance of disinfecting their barns and stables, and keeping a horse that has even the slightest sign of sickness away from the others as one horse in a few minutes might contaminate a whole stable full.

THE CLASSIFICATION OF HORSES AT SHOWS.

JOHN BRIGHT, MYRTLE STATION.

It was thought by the executive of the Provincial Winter Show that this was a subject that perhaps was worthy of being put on the list, as those that have been in connection with shows or those that have been judging at shows throughout the Province know the vexed question of what determines a horse called the general purpose or agricultural horse. The Agricultural Societies themselves are varied in their prize lists and the judges who are sent out by the Department or selected by the Agricultural Societies are as much varied, so therefore it was thought that it would be a good thing if this subject was touched on at this meeting. We should try to get uniformity of classification both with the judges and with the Agricultural Societies. After that was decided on Mr. Gardhouse and myself had to assume the work of taking up the matter in discussion.

We find at the Agricultural Shows throughout the Province that with regard to this class of horse there is a diversity of opinion, speaking more particularly of the heavy draught and general purpose classes. Some shows say heavy draught and agricultural, while some take in the whole three, heavy draught, agricultural and general purpose. I know you will all agree with me that at most of the shows we find a lot of draught horses in the general purpose or agricultural class. Some people will say that the general purpose class or the agricultural class should not be put on the list because there is no distinct breed of that classification. But the Agricultural Societies know, those who are connected with them, how hard it is to run the fall county shows or small district shows and to get a large entry without a good broad classification, and if the general purpose class

and the agricultural class is struck out there would be a very heavy blow struck to the horse show end of all fall shows. Therefore, we feel that we cannot nicely dispense with these classes. Besides this the general purpose class is a very important horse on the market. The horse we call the express horse is a horse in good demand. However, we have some of those, and those who are connected with the shows are very anxious to have a good entry and to have a large exhibit of any class of stock that we hang prizes out for. Consequently that class has to exist, I think.

Now, the question of uniformity of judgment is the next point, because when you find a man or a set of men going out to do the judging at one show in one county to-day who are not discriminating at all against the heavy horses being in the general purpose class or the lighter horses in the heavier class, and then to-morrow you find another set of men judging who classify them differently, the exhibitor doesn't know where or what to show. I know at nearly every show you go to, where the entries are made just on that day, the exhibitors are hunting up the judges to tell them what class they should show a particular horse in. How can the exhibitor know when judges are sent out, varying so in their judgment? The general purpose horse, if there is anything in the name, is a horse that is good for general purposes, that is, for the saddle, single driving in carriage, on a wagon, or on a plough. Now, if general purpose means anything it means use for general purpose work or for express work in the city. We see in many shows—and many judges judging them in that way—a number of small, undersized draught horses showing in the general purpose class. Perhaps they don't weigh more than 1,300 or 1,350. Those horses I say are small draughts. Those horses, you know, wouldn't look very nice under the saddle, and you know they wouldn't hitch up very well in the buggy or make a very good carriage team. They might answer on the plough and on the wagon but not much better than the real typical general purpose horse weighing about 1,300. Now, at a good many shows, if you will take it in teams, you will scarcely find a really typical general purpose team, and if they are all small or undersized draught horses a judge has pretty nearly got to judge them as they are and take them for what they are worth. But, where there is a general purpose horse or mare or team in that class, I think it is the duty of every judge to place that horse in front, if all the rest are small draught horses, even though they are worth perhaps more than the general purpose horse, because, as I said, if that is not done exhibitors never know where to show their horses.

Now a horse in the agricultural class is a small draught horse, a horse of clean limb, but undersized, that will answer the purpose of an agricultural horse on the farm. If there is such a thing as an agricultural horse that is the kind of horse that I would claim as one.

Where those classes are on you will find the heavier draught horses, horses that are not up in condition, or may be weighing 1,600 or 1,700, showing as agricultural horses; and I have seen many of them weighing 1,600 if they were in good show condition, showing as general purpose horses. A number of the Agricultural Societies class them in that way. In my estimation that is not correct, because after all the condition of a horse will vary the weight perhaps two or three or four hundred pounds. Therefore, you can understand that while the general purpose horse should not weigh more than 1,300 or 1,350 pounds it does not mean anything in the draught type of horse. Because a horse will weigh 1,700, it is easily possible for him to be thin enough, yet that does not make him a general purpose horse.

JOHN GARDHOUSE, Highfield: I want to say, in commencing to take up this

discussion, that I believe in all Mr. Bright has said. I have seen that work out at different shows just as he has himself, and no doubt many others of you. However, I think one of the first things that probably we want to get at in this discussion is just what the prize list at the different shows should consist of—what classes the shows in this Province should offer prizes for, and I would say first of all in the male breeding classes, to the animals that are pure bred. I am not very much inclined to advocate the giving of prizes in breeding classes to animals which are not pure bred. Now, in saying that I don't wish it to be understood for one moment in the matter of brood mares at county and district shows that they should not offer prizes for mares that are not pure bred, because the large number of our horses in this country are bred from mares that are not registered mares, and the average farmer in this country is not in a position to go to some of the importers or others to buy mares that have been imported and which have cost a good deal of money to put onto a farm, but they can have good agricultural mares or pretty good strong, well-bred general purpose mares and they can select a right good pure-bred stallion to breed them to. So for that reason I think probably that the county and district shows should give prizes for fillies and geldings and brood mares of agricultural and general purpose types even though they are not registered.

First of all now in taking up the draught classes, we probably have in the pure bred classes the Clydesdales which stand out away above all other breeds in Ontario and in Canada. If it is a district where there are sufficient of them and no other breeds perhaps in that district it might be just as well to make the prize list read Clydesdales at once, but as a rule, the only way you can do to cover all the draught breeds is to take in the different draught breeds and then you are up against the proposition of putting one breed against another, which is not satisfactory to the exhibitor and not pleasant for the judge. We generally find here is a draught class, for instance, that will take in Clydesdales, Shires, Percherons, Belgians and so on. In Ontario we have no Suffolks that I know of; a number of Percherons are coming in and a few Belgians are here. As far as possible it is well to make a class for each pure breed.

As to the matter of classification of the brood mares, fillies and geldings, as I said, I think that will depend perhaps something on the section of the Province which the show may be held in. I know if you get up into some of those western provinces you will strike a lot of real good heavy breeds of horses, and I know at some of the county shows they have three classes, the general purpose, the agricultural, and the heavy draught, and just as Mr. Bright well said, many of the lighter draught horses will then come into the agricultural class, and the still lighter ones will come into the general purpose class, and the difficulty is in that general purpose class we will get every kind of a horse from a carriage horse up to a heavy draught horse, and while we make the classification, and while men may at meetings of this kind decide what they think should be determined a general purpose horse, I am doubtful if you can get any judge that can carry that out at very many of the county and district shows because he has simply got to pick and choose from what comes before him, and make the best of what he has got there. The trouble is so many men will take their animals out to show and if you have got those three classes they will enter them probably in two, and they will look at what they are going up against and show in the one in which they think they have the best chance to win.

I think what we are here for largely to-day is to determine what breeds should be put on the prize list and what classes prizes should be offered for. I suppose

we are speaking largely along the heavy draught class line here and I want to speak largely along that line, because I have always advocated this, that for the average farmer in Ontario the heavy draught horse is the most profitable horse for him to breed. If we can get the right type of carriage horse we will probably get just as much or a little more for that horse than any, but the average farmer has not got the time or experience to breed that horse to get the money out of him that he could get out of the heavier horse.

Now, in some parts of the west we find that they even go further than we do here and they will give prizes for what they term out there farm chunks because they are suitable horses for working on the prairie and doing all kinds of country and farm work.

My own candid opinion is that where there are different breeds and you have sufficient in number of them to make a prize list up for the different breeds, for instance, if you had enough Clydesdales, Shires, Percherons and so on I would give the heavy breeds each a class, and make a class for the others as demanded.

DR. GRENISDE: I think one of the faults lies in this connection with what has been spoken about as not giving specific enough conditions to guide farmers. For instance, I was judging a class here the other night of thoroughbred stallions and I had received no instructions whatever to judge them from, whether they were to be heavy breeds or race horses. If a fair of this standing will not take the trouble to lay down rules to guide a judge and exhibitors, what can you expect from small shows? If you are describing what you want for a general purpose horse you ought to set out what you want and the farmer then knows. If you are going to draw a line between the agricultural horse and the general purpose horse mention the conditions and that will be a guide to the farmers. If the agricultural horse is an undersized draught horse say so. If you want a general purpose horse active on his feet, and clean legged, the right weight and suitable for carriage harness and waggon work, then say so. It won't take up much space in your prize list, and then there is no excuse for not knowing which class, and the exhibitor then is at fault if he has not conformed to the conditions laid down. If you don't put any conditions how is he to know?

MR. NESS: I would like to know from these able men what line we should follow to get this general purpose horse.

MR. BRIGHT: In answer to this question I tell you gentlemen frankly my opinion is that there has been very few men so far that ever undertook to breed to try to get them. They are generally bred haphazard, come by chance, and they have got a misfit, and they call them general purpose. The way it is brought about, this haphazard breeding, is by one year breeding a heavy mare to a light horse, either a Hackney or thoroughbred or a coach horse or any of the light breeds that will produce a general purpose horse so called, or it is possible the other way to breed a light mare to a heavy horse, but generally when you do that you get a colt that shows more signs of the draught breed than it does of the clean legged carriage or express type.

MR. NESS: Did I understand Mr. Gardhouse to say he would only recommend prizes to be given to mares and mares alone in the show ring.

MR. GARDHOUSE: I said I would not be in favor in the breeding class of giving prizes to animals that were not pure bred, referring to that, I meant for sires. Then I went on to state I would give prizes for our agricultural and general purpose mares; if I didn't make that clear I want to do so now. I think I didn't say anything about fillies or geldings, but I certainly would give prizes for them, but I don't believe in breeding from anything but a pure bred sire.

MR. NESS: What I wanted to get at was this, if you didn't give a prize for a two year old gelding; there are lots of horses throughout the country which are thought to be real good. If they thought there was any chance for them they would keep them as stallions, whereas if there was a prize offered for geldings in the ring they would be castrated.

MR. GARDHOUSE: Yes, but geldings are never breeders. I think at every county show I have attended the prize list will read filly or gelding.

I might say I agree exactly with what Mr. Bright said in referring to the matter of weights. I don't think to put weight into your prize list amounts to a snap of the finger. I think the sooner associations drop the matter of weight the better, because you may have a horse that has weight that is quite heavy enough to put it in the draught class owing to flesh, or probably a draught horse with little or no flesh on that can go onto the scale and even come down to the weight that you might determine for an agricultural horse.

In answer to the question as to the breeding of the general purpose horse, I wouldn't advise trying to breed them in this country; we will have plenty of them come from trying to breed the higher classes.

Q.—Would you consider an agricultural horse the same pattern as a draught horse on a smaller scale.

MR. BRIGHT: Yes, that is what I said. I never saw any article in the world yet that did set out what an agricultural horse was. I don't know how it originated. Some Fair Board I suppose called the small draught horses general purpose horses or agricultural horses instead of having two different classes of light and heavy draught horses.

DR. J. H. REED: My contention is that the only way in which we should classify a draught horse is a horse of a certain weight; an agricultural horse is that same horse, but one is 1600 pounds or over and the other is less than 1600 pounds. As far as conditions are concerned if that horse is in condition to-day and he weighs 1650 pounds he is a draught horse, that is provided we make that the limit If he falls 75 pounds in three months from now in my estimation he is an agricultural horse. We want a certain sized bone for a certain size of horse. Mr. Bright and Mr. Gardhouse say an agricultural horse is an undersized draught. My contention is just the same. He should have all the characteristics of the draught horse. We have lots of Clydesdales that are not heavy enough for the heavy draught class, at the same time they are probably as good quality, as fine of bone, and often of better quality, and better conformation and better action than their larger brothers. An agricultural horse is to a certain extent a misfit. No man is justified in endeavoring to produce general purpose horses. The general purpose horse is a large sized coach or saddle or road horse, as the case may be, but he is not of sufficient quality to make a typical animal of his class; he is not good enough to show in the heavy draughts or hunter class or for the saddle class, but he has the characteristics of the general purpose horse. He will do well or reasonably well in a saddle or in the carriage or light harness and he will draw a plough or an ordinary sized load on the waggon; he is a horse that is not particularly out of place in any condition, but he is not essentially a horse belonging to any of the recognized classes. The undersized horse in my estimation has no class except we do as they do in the west, give a prize for farm chunks. A horse that doesn't weigh at least 1400 pounds has no class; he is still a valuable horse.

ONE IN THE AUDIENCE: As I understand this reasoning, there is no such thing as the general purpose brood mare. We have been told we get this from

a combination of the light and heavy horse. If that is the case why make a class for her at our fairs? If these general purpose horses are mere accidents, and if the fairs are for somebody's convenience it seems to me we would be justified in making some class for that purpose, but as a breeding proposition I think they should have no place.

Mr. Bright: What I said was that from my experience I believe we have got a number of those horses in our country, we have got perhaps too many of them that are not good enough of that kind or variety, but we want an exhibit; it is hard work to get up a show. We believe that with a boy starting out with a mare that would be termed general purpose, that in judging that kind of horse we are encouraging him to go on to try and get a better horse, breed a better horse, and take care of his horse better, and that is where we think the agricultural society is a good thing. Then if we cut out the general purpose class all but teams we cut out a lot of exhibitors of horses at our shows, and we deprive a lot of young men who are starting to show, of the privilege. In that line they can be judged from foals up to mares and teams just as well as in any other line.

One of the Audience: Don't you think that this class for general purpose mares and colts at fairs is a mistake all the same? It has been my experience that that has caused more confusion among exhibitors as to what really constitutes a general purpose horse than any other cause. We find judges awarding prizes sometimes on the mare and sometimes on the colt. What is to be the standard of judgment in such a case or if such a classification is allowed to have a place in the prize list?

Mr. Gardhouse: I just want to say a word. I think probably it would be a mistake to cut that class out because many of our farmers' sons throughout Ontario at the present time are using that class of horse on their farms, they are the best that they have got, and just as Mr. Bright said we want, if we can, to educate them to get something better. If we can get them interested in taking care of those and fetching them up in the best shape they can it will give them a chance to get a start. They have got to get their education some place, and I think perhaps while this is elementary, as it is, with a large number of those general purpose horses or misfits, if you wish to term them that, we had better have a class at our county shows for them, and try to educate our young men up to better things. Personally I would like to see it cut out, but as we are to-day I think it would be a mistake.

THE BEEF CATTLE INDUSTRY IN ONTARIO.

Thomas McMillan, Seaforth.

Every student of the agricultural progress of Ontario, must realize that the time has fully come, when, in our farming operations, the live stock industry must assert its rightful position of being the very right arm of a successful agriculture.

We can no longer continue in the race by selling our raw materials, such as coarse grains and fodders, by the bushel or the ton. That system of operation in the past, has impoverished the farm, and to-day it is impoverishing the farmers. The successful farmer of the future, must be a manufacturer, in the truest sense of the term. He must be a manufacturer of those high-class products, such as we see in the various departments of this great exhibition. The grand object of these exhibitions is to blaze the trail, to set the pace, and to present the ideals, to which, in his practical operations, the general farmer of this Province must aspire.

The department of live stock husbandry, which has been allotted to me for discussion, this afternoon, is "The Beef Cattle Industry in Ontario."

The impression, however well founded, has gone abroad, that the average quality and condition of the beef animals sent to market in recent years, are not so good as they formerly were. Without entirely endorsing that impression, I believe there are three or four reasons why the average quality of our animals do not reach the high standard which we would all like to see. I may not be altogether right in my opinions, but I express those opinions with that degree of frankness and freedom which I trust may be returned in the discussion which follows, because I feel that this is a question of vital importance to the future of the beefing industry of the country.

At the outset I may say that in this Province, there have been four of the beefing breeds handled for the purpose of beef production. These are—the Shorthorn, Hereford, Polled Angus, and Galloway breeds; and I may also say that the very large majority of our beefing animals have, up to the present time, been of the Shorthorn strain: In fact in most of the beefing sections of the Province, until very recently, the foundation stock of breeding females, has been almost entirely Shorthorns and their grades.

As I have already said there are three or four reasons for the lack of a satisfactory degree of progress in the beefing industry.

The first must be laid at the door of the Shorthorn breeders. For a number of years in the past, many of the Shorthorn breeders of this Province became so entirely engrossed in their desire to supply breeding males to the ranchers of the Western States and Canada, that in their zeal they had almost forgotten that the Shorthorn was a milking animal. The production of milk is in reality, a maternal function, which, however strong it may be, if allowed to remain latent through disuse, gradually disappears. For years, many of our breeders almost entirely overlooked this utility characteritsic of the breed with the result that ultimately, when the general farmer and breeder of Shorthorn grades, came to look for a pure bred sire, he found it almost impossible to obtain one which would transmit the milking quality to the offspring; and he, in this dilemma, ever mindful of the every day returns of a milk-cow, often bred his herd to indifferent sires of very indifferent breeding, often to sires of the dairy breeds. Such a system of breeding was fatal to the welfare of the beefing industry of the country. Under conditions such as these, how could we expect the beef cattle industry to flourish as it should.

I am glad to know, however, that, largely as the result of a determined agitation against these conditions, in the Shorthorn world, there has been a gradual, a rapid awakening in the minds of our Shorthorn breeders along these lines, not only in this country, but, as well, in the old land, with the result that many of them are now anxiously endeavouring to reproduce, and make prominent, the milking characteristics of the breed.

The second cause of the lack of progress, I lay at the door of those agricultural preachers, who have gone all over this Province, telling the farmers, that there was no such thing as being able to get the beefing quality and the milking quality, in the same animal. I do not accuse these men of insincerity: No doubt they believed what they said. They were honest and sincere in their convictions; and that very sincerity, no doubt, had the effect of causing these Shorthorn grade breeders, of whom I have spoken, to feel that it was useless to look any more, for the milking quality in the pure bred Shorthorn sire, and so confirmed them in the use of those indifferent males.

Let us for a moment consider the contention that there is no such thing as a dual-purpose animal; for if this is a fact, then it is fatal to the further progress of the beefing industry, as at present very largely carried on in the beefing sections of this Province.

I desire first, to consult my own personal experience. Although now largely engaged in the beefing business, yet I was brought up as a dairy man. As a boy I fed and cared for from 20 to 24 cows on my father's farm, and it is one of my distinct recollections, that some of the best milk cows of that herd, were also the dams of the best of our feeding steers; and it was also surprising, when those same cows were let dry for a month or two, how rapidly they would flesh up and get in good beef condition. Again, I have gone through the beefing sections of this Province, over the old County of Ontario, and when I would enter the farmers' stables, and lay my hand on what appeared to be almost pure-bred Shorthorns, I have been repeatedly told that those were among the best milkers on the farm. I have met with the same experience in the County of Middlesex, and through my own County of Huron. I do not for a moment say that this is always so, but I say I have met with this experience. During my attendance at Institute meetings also, to the question often put to the farmers,—"Do you find that your best milking cows are the breeders of good feeding animals?" I have often had the reply, that they were the very best. Go to the MacDonald College at St. Annes, Quebec, and we get further testimony. Consult the reports of the Wisconsin Experimental Station, and I find they had one Shorthorn cow of Bates blood, which at the six years, gave a return of 585 lbs. of butter, and dropped a calf, which at 32 months weighed 1700 lbs., and took third prize in the Agricultural College class at Chicago Fat Stock in 1900. Another cow at two years, produced 326 lbs. butter in ten and a half months, and dropped a calf, which at 21 months of age, weighed over 1500 lbs.

Again when we investigate conditions in the Old Land, in that great home of the Shorthorns, we are told that it is a striking fact that upwards of seven-tenths of all the stock used for dairy purposes in Britain are Shorthorns and their grades. We do not for a moment pretend to say that perfection of beef type can be quite so closely approached on the average by a dual-purpose, as by a special-purpose beef strain; neither would we claim that quite as high an average of milk production will be attained, as by the special-purpose dairy breeds. What I do claim—and it is supported by abundance of evidence in England as well as Canada—is that a serviceable and profitable combination of these qualities can be attained, which will suit to perfection, the requirements of thousands of farmers, for the economical production of good, even high-class beef, on high-priced lands.

My third reason for the lack of progress is due to the great, I might say, the positive indifference of altogether too many of our beef growing farmers. They do not manifest that degree of snap, that enthusiasm and love for their business which should characterize the action of men who live in earnest. They not only do not exercise sufficient care and judgment in the breeding of their animals, but after they do get them, in too many instances they are not half fed nor sufficiently well cared for. I often think it would be interesting just to know what a large percentage of our young stock animals are housed in the fall in fairly thrifty condition, yet, when they strike the grass again the following spring, although they have grown, they have become so much shrunken in their general condition, that they are scarcely any heavier than when they were stabled. Together with this scant nourishment during winter, they are often not furnished with a full sufficiency of pasture during the summer. How then can we expect desirable results from

such a course of treatment? I fail to realize how anyone can have a love for their business, who will work around their animals all winter long and keep them in a thin, skinny and constantly declining condition.

A fourth reason may also be given for a shrinkage in the average weight and condition of the animals sent to market. During the past year or so, there has been such an additional demand for beef, that, in order to satisfy the demand, animals much younger and in a less finished condition have been sent to market. Partly as a result of their conditions, we find that the returns of 1909 show a reduction of 295,034 cattle in this Province in three years, and I have no doubt when the returns from this present year are issued the numbers will show a still further shrinkage. In order to remedy these unfortunate conditions, and place the beef cattle industry of this Province in the forward condition which its importance demands it should hold, we must continue, even with greater enthusiasm, to preach the doctrine of more skilful breeding, and a more profitable system of feeding and management than has been followed in the past. Our exhibitors must continue to demonstrate, our Department of Agriculture, with a higher conception of the commanding importance of the business, must continue to direct, and its missionaries, clothed with a fund of such practicable and valuable information, must be able to carry and convey it to the general public in such a convincing way, that they will awaken dormant energies, and arouse enthusiasm to such a degree, that farmers will realize that the business is not only one of fascinating interest, but that it carries with it substantial profits as well.

In the successful prosecution of this business, we must never weary of emphasizing the fact that, after skill has been exercised in breeding, and the young beefing animal is dropped, it must be given such care and feeding as will bring it to maturity as early as possible.

We must also encourage the rearing and handling of those beefing breeds of animals which have the right kind of back; broad, smooth and well covered; animals which have the ability to put the meat on the right place, and in the right way, where it will fill the eye, and command the highest price both on foot, and when the carcass is hung up in the meat shop.

We want the cows which produce these animals to give milk too, and give plenty of it, and our breeders can get them, and raise them, and have them if they only try, and they must try. For the purpose of encouraging this quality the Government should make a substantial contribution.

As I have already said, early maturity offers the only safe system of profitable beef production. The young beefing animals must be fed such full and suitable rations as will enable them, during the process of growth, to deposit the fat in the lean tissues of the meat, and then when they are slaughtered, and the carcasses hung up in the meat shop, they will present a choice quality of fine marbled beef, which, when properly cooked fairly melts in the mouth; and which every consumer so much desires.

I see no reason why we should be afraid of the markets. The palate of the people, both at home and abroad, will always demand juicy and delicious cuts, and it is our duty as beef growers to produce these. I am not losing any sleep over prospective prices; in fact in the beefing industry, prices have rather been going our way lately, and when I notice the shortage of beef the world over, and that in some of the countries of Europe it is even a trial for many to get horse-flesh for meat, I have great confidence that, at least, reasonable prices will continue.

The almost ruinous liquidation of cattle at present witnessed in the five principal Western American markets, along with the presence of a bumper crop of

American corn, might lead one to think that prices had come down to stay. However, the statistics from those five markets, give absolutely no ground for such an assurance. The surprising and encouraging feature of those statistics is, that those five markets record during the first ten months of this current year, a stocker and feeder movement of only 38,944 head in excess of 1909, when the price of feed was exerting a repressive influence on beef-making operations.

It has also been said that this year's stocker and feeder movement in the United States puts that of all the former seasons into the shade. This is not so. The year 1907 was the big year, and since then it has decreased in volume. The first ten months of this year from the five principal markets show an output of stockers and feeders of 1,378,291, against 1,592,003 during the same period of 1907, a decrease in four years of 213,712 head. These figures ought to be convincing that there is no great avalanche of American beef in the course of preparation.

In addition to our present markets, I am living in the sanguine hope that, in the near future, with our beef cattle we will get free access to that great consuming market of the American Republic, and when we do we will then have access to the very best market of the world, and it is right at our very door. We will then have access to a market where there are more people able to command an annual allowance as incomes of $10,000 a year than is to be found in all the rest of the world. They are the people who consume the high priced beef sold in the Chicago market, none of it is shipped abroad. It is all consumed at home. If we do get into that market, it will do more for the beef cattle industry of Ontario than all the Government enactments of a generation. It will give us a steady market at fairly good prices all the year round, and we will not then be, as we are now, practically shut out of our market for six months of the year, by such a long overland railway journey, which precedes the ocean voyage to the British markets. It will be a welcome change which will help our business, help our pockets, and it will not hurt our loyalty either.

Q.—What did your beef animals return you?

A.—An average of $52.56.

Q.—What age?

A.—That is over and above the cost, counting the cost price of the feed I bought and the pasture that these animals consumed. I finished some of them in the stable and some I put out to grass; but that is the average of the whole business. I wintered 88 head, altogether I handled 115 head and they averaged me $52.56 a head. I always buy them at two years old or yearlings and some of them might be three years old in the fall of the year, but in the general way the are about two years of age, and when I put them in the stable they averaged 1,090 pounds. This fall the ones I have in the stable averaged 1174 pounds.

Q.—What grain ration do you feed?

A.—For finishing during the winter, when I start in the fall of the year with the object of marketing these cattle during the months of April or May, I start in with ensilage as the basis of my ration. I grew enough corn to feed these animals from 35 to 40 pounds of ensilage each day. This I mix with the cut straw and a little grain, possibly two pounds to start with. I grew a mixture of oats, barley, goose wheat and a little peas, and along with that I feed a little meal, shorts, and I am feeding a little corn now, but fed no corn at the commencement. I gradually increased that ration and I am feeding six pounds now and I will keep on increasing until I will feed eight or nine pounds during the finishing period; and when I get up to that I withdraw the straw portion of the ration and substitute

for it clover hay. Along with that ration of cut feed I give them one feed of hay every day, just a small feed and during the finishing period I reduce the quantity of silage, and withdraw most of the cut straw and increase the clover hay and the meal ration.

Q.—Do you not feed any turnips?

A.—I do not feed turnips to these animals that are two years old. I have not had a beef animal of my own growing on the place for over 20 years, longer than two years old. I find from experience that it will not pay me to feed them roots and corn fodder together. I have had a number of animals in one stable that I feed roots and another stable I do not feed any roots and I cannot say that in the finishing of the cattle that it pays me to grow these roots to feed them, but on the average farm we farmers who are feeding young stock find there is nothing that will take the place of roots.

Q.—You would not advise feeding oil cake?

A.—This year it is very dear and I doubt if it pays. I am opposed to feeding twice a day. I believe in feeding three times a day. My brother tells me his system of feeding twice a day is better; but I notice it takes him far longer to feed twice a day than it takes me to feed three times; in fact I often tell him that he feeds four times instead of three.

JOHN CAMPBELL, WOODVILLE: I would like to have the tongue of an orator for the twenty minutes that is given me this afternoon to impress upon the minds of the young men some important points. There are two thoughts in Mr. McMillan's address I would like you to carry home and ponder over, and that is the great importance of having the right kind of quality, and having the animals with quality carried on from birth to block, so that they will go upon the market in the very best finished condition, and so bring the highest price. Many excellent thoughts have been brought before us to-day by Mr. McMillan, and it would be impossible for me to touch upon them all. When he showed you there was a difference of one and two dollars per 100 pounds weight between the inferior animal and the well-bred bullock, I think he was very moderate. I have no doubt but there are dozens right in this audience who can bear testimony to and endorse what Mr. McMillan said. Last spring it was a very difficult matter for people generally to have the conscience to ask for their offerings the prices which good finished animals would bring in the local and general markets.

It appears to me that one of the most important considerations at the present time along with good breeding is proper feeding. Proper feeding does not necessarily mean the use of great quantities of expensive foods, or doing it in an expensive way. I believe we should keep before our mind's eye constantly the question of cheaper production. There are some here that can bear testimony to this, that with abundance of summer feed, plenty of grass in the field, and rape for use in the fall of the year, for the beef animal that is going into the stall to finish, it is quite possible to produce 100 pounds of weight at from a quarter to one-third the cost that it is possible to do, with any system of stall feeding. That leads us to the thought that it is the height of folly for people to take large overgrown steers that have been carried on half starved, winter after winter, with some flesh added in the fields, but are only thin cattle after all, then put in the stall at the beginning of winter and feed on for six months to finish when it will cost three times as much compared with the possible addition of weight put on in the summer and fall before. I say this from experimenting for four years in succession along the line of the use of rape during the fall months in preparing bullocks for short keep in stall. We know of nothing at present which will give so much weight at so little

cost, as the rape field, and plenty of long rough grass. In this County of Wellington such feeding is largely practised.

Talking along the line of feeding there is another question that is very much discussed at Institutes, a question I would like to see definitely settled, and that is the consideration of the profit and the benefit that is to be got from ensilage, compared with roots. You know it is universally acknowledged and a well-known fact that in connection with the winter production of milk, ensilage and silo are necessities. It is a question whether ensilage has similar value in beef production and it is not a settled fact in the minds of the public generally as to which is of the most importance, roots or ensilage in beef making. Allow me to suggest that there should be some thorough experimenting, year after year, in order to settle that and to set it at rest. I mentioned this fact to Mr. McMillan and he tells me the experiment has been carried on. I hope we will get what results have been obtained so far, and whether they are definite conclusions or not. It is a case for our Agricultural College Staff to determine.

Another forage plant that is coming into use, which is likely to have a very strong bearing upon this question in the years to come, is that of alfalfa. I believe alfalfa, even if it may not have the value that scientific men lead us to believe, is to be one of the important factors in future beef production, perhaps a more important one than any other forage plant we have got with the exception of rape. Well saved alfalfa hay with roots form one of the best combinations I know of in beef production in the stall at the present time, with meals added according to age.

Talking about baby beef, he says there is a present rushing to the market of well-finished young animals and the supply does not equal demand. That is quite correct. On high-priced land in the Province of Ontario, from now on, it will be simply impossible to get the largest possible profit unless we get our beef cattle to the market ages, varying from fifteen to thirty months, according to conditions and situation. The man who breeds the good beef cattle, provided he has got the facilities for so doing, should also be the finisher. It is a mistake in business on the part of those who breed good animals to turn them over to another to finish. Why? Because the finisher, if he is a good buyer, will get the cream of the business every time.

As to dairy Shorthorn cattle, last week in Chicago one of the pleasures experienced in examining an immense amount of stock of excellent quality, was a show of Shorthorn dairy cattle. I can assure you, friends, according to the picture that has been placed before us here to-day by Mr. McMillan of the cows in their stables in his younger days, a dozen in the International Show ring, three or four of which were as good a combination of the beef and of the dairy animal as seen at the Royal Show in England, where each type was studied on five different occasions, and it is beyond the belief of the majority here, that it would be possible to see such combinations of the beef animal and the milking quality as well.

Mr. Dryden, who returned from Europe lately, told us the other night on the way from Chicago that while in Scotland he attended that great Duthie sale of which you have all read. He was assured by Mr. Duthie, and informed by others, that there was no such thing as a nurse cow on Mr. Duthie's farm used to bring those calves out in such wonderful flesh and bloom as to bring in at an auction sale, five weeks ago, prices up to $5,250 each. Those results show you clearly that the Shorthorns are a dual-purpose breed, and that is the breed furnishing the prevailing grade in the Province of Ontario at the present time.

The young man of to-day in the Province of Ontario who is going into the beef making business must pay particular attention to the lines set out here to-day if success is his aim.

Another thought: Don't forget this fact, that this Province of Ontario is bound to become, and is becoming every year, more and more a manufacturing Province along the lines that have been spoken of, and the man who will attempt to put his raw products upon the market, and rob his land at the same time, is bound to grow poorer and poorer as the years go by.

Eleven months ago, when asked to go over to the State of Illinois to Live Stock Association meetings, you may imagine my astonishment when I was told that the great, growing State of Illinois, largely caused by the reduction they have made there in producing stock during the last ten years, only gave an average of 28 bushels per acre of corn, whereas the Province of Ontario, in its two or three corn-growing counties gave an average of 76 bushels. Why? Because they are doing away with the live stock and they are at the time doing away with and reducing the productiveness of their land. That is what we have got to guard against. My past experience prompts me to say to you here to-day, aim, above all things, to keep up the productiveness of your farms, and in so doing your daily labor and yearly toil will give double the return that otherwise would be the case.

THE REVISED ACT FOR THE PROTECTION OF SHEEP AND TAXATION OF DOGS.

Lieut.-Col. Robert McEwen, Byron.

The object of this address is to familiarize ourselves with the Act for the Protection of Sheep and to Impose a Tax on Dogs, and the amendments made to it by the Legislature last session. For some years the matter has been pretty well ventilated, here as well as at meetings of the Sheep Breeders' Associations, so that the object sought, the removal of an unrestricted menace to sheep breeding, has been well discussed from all points of view, with the result that an Act is now in force which will, it is believed, meet with general approval. When the Act was up for consideration by the Committee of the House on Agriculture, the members were by no means unanimous in their views, vigorous objections being raised to the clauses requiring every municipality to collect a tax, and also as to the amount that tax should be, this arising apparently from the fact that in some constituencies so few sheep are being bred that it was unnecessary. And it is worthy of note that this Committee is composed of either farmers or the representatives of farmers, showing that people are not all of one mind regarding the necessity of amending the Act or else they are not represented. But what is aimed at is to have such uniform conditions throughout the Province protecting sheep breeding operations that farmers will feel safe in engaging in the enterprise without question of doubt existing as to the compensation that will be paid for sheep killed or worried by dogs. It is not sufficient that one township should be protecting and encouraging sheep breeding to its utmost and that adjoining townships should do nothing, and for this reason it was considered advisable to have a measure directing the actions of Councils rather than one of a permissive character such as has been in operation. In years past many municipalities in this Province collected no dog tax, while some collected a tax but avoided paying for losses of sheep killed by dogs, a condition of affairs sheep breeders loudly protested against and seriously suffered from.

Now perhaps it would be as well to specify the principal changes that have been made in this Act under review. The first clause was amended to read that a

tax SHALL be collected, one dollar for a dog, if only one, and two dollars for each additional dog; three dollars for one bitch and five dollars for each additional one. The idea of having this alteration was to stop the harboring of a number where one for actual use was all that was required and that the keeping of bitches without a view as to their value for breeding purposes, should be discouraged. Those interested in raising pure bred dogs can still obtain a kennel license by paying $10.00 annually. Then the clause relating to what action was required in order to avoid the assessment of dogs was entirely struck out, thus taking away the power of a Council to pass a by-law not to levy a tax upon receipt of a petition of 25 ratepayers. This was the section which rendered the first clause too frequently inoperative and its repeal removes every pretext by which dogs avoid taxation. The law now plainly says, without any reservation, that every dog shall be taxed. Then follow several clauses, with minor changes, required to suit the amendments first mentioned, until we reach that which in the old Act provided that a tax could be collected but that a Council could dispense with the payment for damages done by dogs to sheep. This clause was very properly repealed, for the reason that if dogs were assessed and a tax collected for the protection of sheep, the fund arising therefrom should be devoted to the settlement of claims before diverting it to other purposes.

The Act authorizes that anyone may kill a dog which he sees pursuing or worrying sheep. A straying dog also may be killed, but the conditions under which it is lawful are of such a nature that the greatest care is demanded that no violation of them occurs in such a proceeding.

The owner of a dog is liable for any damages it may do to sheep, or for that matter any other animals, and in the event of the owner being unable to pay the amount the municipality is liable for a sum not exceeding two-thirds the loss incurred. A new section was added requiring all Councils at the first meeting in each year to appoint sheep valuators whose duties are defined.

There remains one more section to which attention is especially directed, and as it is of such importance, I will read it to you as it appears in the Act:

"The owner of any sheep or lamb killed or injured by any dog, the owner or keeper of which is not known, may within three months after the killing or injury, apply to the Council of the municipality in which such sheep or lamb was so killed or injured, for compensation for the injury; and if the Council (any member of which shall be competent to administer an oath or oaths in examining parties in the premises) is satisfied that the aggrieved party has made diligent search and enquiry to ascertain the owner or keeper of such dog, and that such owner or keeper cannot be found, they shall award to the aggrieved party for compensation a sum not exceeding two-thirds of the amount of the damages sustained by him, and the Treasurer of the municipality pay over to him the amount so awarded."

This clause was not amended nor added to in any way and I am advised by one of the best authorities in Municipal law, positively binds a Council to pay for sheep losses by dogs, provided of course the claimant has followed the routine required by this and previous sections. This Act came in force last March and possibly in many cases subsequent to much assessment being done, yet there does not appear any provision by which a Council can escape liability whether a dog tax is levied or not. Although an effort was made to have the compensation *not less than two-thirds* the proposition was not received with approval.

Under the improved conditions and increased protection which this Act secures, it is hoped that breeders of sheep will have greater confidence in their undertaking and that future statistics will not annually record decreases in the number of sheep in this Province.

SOME SWINE EXPERIMENTS.

G. E. Day, Professor of Agriculture, O. A. C., Guelph.

The moment a person touches upon the cost of producing stock he finds his way beset by difficulties and objections. It is a strange fact that there should be so many farmers who are doing their best to discredit the business they are in by claiming that no money can be made out of it. Not many months ago a letter appeared in one of our leading agricultural papers wherein a farmer set out to prove there was no money in feeding hogs. He stated the amount of grain consumed by forty hogs, and according to the weight of grain which he claimed these hogs consumed, they must have eaten nearly six pounds of grain each per day from the time they were born until they went to market. As a matter of fact, an average of three pounds of meal per day per pig from birth to market, would be a pretty heavy consumption of meal. Reckless statements such as the one referred to do no good to the man who makes them, nor to the business he follows, and it is surely poor business for a man who owns land to attempt to show that land is a poor investment.

The great difficulty in connection with arriving at the cost of production is to know what to charge for foods consumed. Somebody says: "That is easy, charge market prices, of course." But if we charge top market prices for foods, we find that the margin between the cost price and the selling price is usually small, unless the farmer has a special market for his products. In other words, a man who had to buy all the food for his stock would find difficulty in making ends meet, unless he obtained fancy prices for his output. He would be placed in the same position as a manufacturer who bought his raw materials from retailers, paying the highest retail price. No manufacturer could show a profit if he followed such a plan, and if live stock can be made to show a profit above the retail price of the raw material used in its production, it simply goes to show that the live stock business is a long way better than any manufacturing business under the sun.

Even in the case of purchased foods, the actual cost may, in some cases, be less than the apparent cost. For example, most farmers purchase foods for stock with money obtained from the sale of grain, or other produce. Suppose that a farmer sold wheat at $1.00 per bushel and used the money to purchase middlings at $25.00 per ton, the $25.00 paid for a ton of middlings does not represent the actual cost to the farmer. The actual cost to the farmer of a ton of middlings is twenty-five bushels of wheat, plus any incidental expenses and labor incurred in effecting the exchange. It will be seen, therefore, that the cost of the ton of middlings to the farmer, depends entirely upon what it costs him to produce his wheat, and it is right here where live stock performs one of its very important functions, namely, that of enabling the farmer to reduce the cost of production, provided he realizes the importance of making the most of the manure they produce.

In our calculations which follow, we have charged purchased foods at what was paid for them, but some of the other foods are, possibly, not quite up to their retail value, because the grain which we fed was as it came from the threshing machine. We feel that the charges are high, and that the actual cost of the pigs in question was less than is represented.

Cost of Raising Pigs.

In the spring of 1910 we had nine breeding sows, six Yorkshires, two Berkshires, and one Tamworth.

The first sow farrowed on April 13th, and the last one on June 22nd.

The pigs were weaned at six weeks old, except the last litter, which was weaned on July 28th, the pigs being only five weeks old.

A record was kept of all food consumed by sows and pigs from the time each sow farrowed, until July 28th, when the last litter was weaned.

The nine sows raised 72 pigs, and the average age of the pigs on July 28th was 79 days, or approximately, 11 weeks.

Taking in each sow when she farrowed, and carrying her and her pigs along until July 28th, we found that the sows and their pigs together consumed the following quantities of food, which have been valued at what we regard fair market values:

Wheat middlings	5,030 lbs.	at $22.00 per ton	$55.33
Barley	2,965 "	at 22.00 " "	32.62
Oil cake	250 "	at 38.00 " "	4.75
Skim milk	17,016 "	at 20c. per cwt.	34.03
			$126.73

Therefore, the total value of food consumed by sows and pigs from the time the pigs were born until the last litter was weaned, amounted to $126.73.

Maintenance of Dry Sow. To arrive at the total cost of the pigs, we must make a charge for maintaining the sow after her pigs are weaned, and before she produces her next litter. In previous calculations, we estimated the cost of maintaining a dry sow at 75 cents per month. Lest this estimate be regarded as too low under present conditions, we shall place it at $1.00 per month. If a sow raises two litters per year and nurses each litter six weeks, there will be left about 9¼ months each year between litters, which, at $1.00 per month, amounts to $9.25. Only half of this amount, or $4.63, should be charged against any one litter.

Interest, Risk, Labor, and Manure. These are controversial points, and the allowance which should be made for each is difficult to estimate. In the meantime, therefore, we shall leave these items out of consideration.

Total Cost of Pigs. It has been stated that the average age of the 72 pigs was 11 weeks when this part of the experiment closed. The cost, therefore, of these 72 pigs at 11 weeks old, omitting risk, interest, labor, and manure, was as follows:

Service fees, 9 sows at 1.00	$9.00
Maintenance of dry sows, 9 sows at $4.63	41.67
Value of food consumed by sows and litters (average age of litters, 11 weeks)	126.75
Total cost of 72 pigs	$177.42
Average cost of one pig 11 weeks old, omitting risk, interest, labor, and manure	$2.46

In 1906, with 12 sows we found that, on an average, a pig six weeks old cost us $1.27. This year we charged higher prices for food than we did in 1906, so that

a cost of $2.46 for a pig 11 weeks old is a better record than that of 1906. The improvement is due mainly to the fact that our sows raised larger litters this year.

An average of 8 pigs per litter for 9 sows is more than can be ordinarily expected, but where only one or two sows are kept, 8 pigs to a litter is not an unreasonable expectation.

Returns for Food Consumed by Hogs.

In the College Report for 1907 there is a table showing the prices yielded for food consumed by 297 hogs, at various selling prices per pound live weight for the hogs. The table shows that if the hogs were sold at:

(*a*) 5c. per lb., they would give $23.87 per ton for meal, 20c. per cwt. for milk, and 10c. per bushel for roots.

(*b*) 6c. per lb; $30.71 for meal, 20c. for milk, and 10c. for roots.

(*c*) 7c. per lb.; $37.55 for meal, 20c. for milk, and 10c. for roots.

Regarding the hogs used in this year's test, it has been shown that, at 11 weeks old, they cost us $2.46 each, omitting the items of interest, risk, labor, and manure. However, since we selected the best 40 pigs out of 72 for our test with alfalfa, milk, etc., and since no charge was made for interest, risk, or labor, we shall charge the pigs used in this calculation at $5.00 each instead of $2.46. We are also charging 20c. per cwt. for milk, and $3.00 per ton for green alfalfa. Whatever is left, therefore, after deducting the cost of the pigs at 11 weeks old and the value of the milk and alfalfa, from the value of the pigs when marketed, will represent the cash received for the meal consumed. The amount to be deducted from the selling price is as follows:

40 pigs at $5.00 each	$200.00
10,760 lbs. of skim milk at 20c. per cwt.	21.52
1,467 lbs. green alfalfa at $3.00 per ton	2.20
Total. . .	$223.72

The following table shows the prices which would be realized for foods consumed by these hogs had they been sold at 5c per lb., 6c. per lb., 7c. per lb., and 8c. per lb., live weight.

Prices Realized for Foods Consumed by 40 Hogs.

Assumed selling price of hogs, live weight.	Price received per ton for meal.	Price received per cwt. for milk.	Price received per ton for green alfalfa.
If sold at 5c. per lb.	$20.45	20c.	$3.00
If sold at 6c. per lb.	31.30	20c.	3.00
If sold at 7c. per lb.	42.16	20c.	3.00
If sold at 8c. per lb.	53.00	20c.	3.00

It is of interest to note that the results agree fairly well with those reported in 1907.

These results also show that the hog is able to give a good account of the food he consumes, when he is sold at 6c. or more per pound.

Q.—Were the hogs kept in pens or fed on pasture?

A.—Only eight of the hogs were fed on pasture, but the pasture was not very good. The pigs which were fed green alfalfa in pens along with their meal ration did much better than those on pasture.

Q.—What breed were the hogs?

A.—Mostly Yorkshires and Berkshires.

Q.—Did you ever use dry alfalfa?

A.—Only to a very limited extent. Alfalfa hay can be used to very good advantage in maintaining matured pigs such as breeding sows and boars, but is not so satisfactory for young pigs though a very small amount might be fed. One of the most satisfactory ways of feeding alfalfa hay is to run it through a cutting box, mix it with meal, and allow it to soak for a time before feeding.

Q.—What kind of meal was fed?

A.—The pigs in this experiment were first fed middlings, later about one-third barley was mixed with the middlings. This was increased to half barley and finally to two-thirds barley for the last thirty days. The meal was fed wet, but not soaked.

Q.—How heavy were these hogs?

A.—They varied a good deal in weight, but the heavier ones weighed about two hundred pounds.

Q.—What is a good substitute for skim milk?

A.—It is not easy to get a satisfactory substitute for skim milk for very young pigs. The best substitute we ever used is a product manufactured by Swift & Co., of Chicago. It is made up from slaughter-house offal and is known as Tankage. Unfortunately, it is almost out of the question to attempt using it in this country, owing to freight charges and duty. When we have no skim milk we seldom wean our pigs until they are seven or eight weeks old, and we try to get the young pigs well used to eating wheat middlings before they are weaned. If they do not relish the middlings, an improvement can be made by pouring boiling water on the middlings and allowing the mixture to stand a few hours before feeding. This tends to make the food a little more palatable.

Q.—Do you ever try flax seed?

A.—Yes, and we have also tried oil cake with only fair success. We have always had some difficulty in getting the little pigs to relish food containing oil cake. When we could get them to eat the food freely, we got very fair results. An extract made by soaking alfalfa hay in water is a great improvement on clear water for mixing with middlings for young pigs. I may add that feeding hogs on an exclusive meal ration is not a satisfactory method of feeding. A little variety in the way of green feed in summer and roots in winter makes a wonderful improvement in the rate and economy of gain.

Q.—What proportion of roots do you feed?

A.—We vary the proportion according to circumstances, but in our experience about equal weights of mangels and meal represents about the maximum amount of roots advisable for cheap and rapid gains.

Q.—Do you pulp the mangels?

A.—As a rule, we pulp them and mix with meal.

Q.—Do you ever feed whey?

A.—Yes. Generally speaking, whey has a value about half that of skim milk.

Q.—Do you recommend feeding whole peas?

A.—No. If it becomes necessary to feed them whole, I would recommend soaking them first. In my estimation, however, it is much more profitable to grind

the peas and mix the pea meal with some other kind of meal. Pea meal has a somewhat high feeding value, but should never be fed alone, as it is liable to cause digestive troubles. Mixed with other kinds of grain, however, it is a very valuable food.

Q.—What about pasteurized whey?

A.—Pasteurized or sterilized whey or skim milk is preferable to the raw product as a protection against disease, especially tuberculosis.

Q.—Will pasteurized whey keep sweet for a longer time than unpasteurized whey?

A.—Yes, I believe it will, but in our experimental work we found practically no difference between the feeding value of the two kinds of whey. I regard pasteurization as important mainly from the standpoint of protection from disease. I am informed by the representative of one of the leading packing houses in Chicago that they obtain a large number of hogs affected with tuberculosis from dairy districts where the hogs have been fed whey and skim milk.

Q.—Is there not twice as much fat sent to the patron in the whey that is pasteurized as there is in that which is not?

A.—I am not prepared to say that there is not. Unfortunately, our experimental work with pasteurized whey could not be conducted with whey from a large cheese factory, and consequently the comparison was not made under conditions which would prevail at cheese factories throughout the country. In this respect, the comparison was possibly not a fair one though we aimed to have she conditions as nearly alike as possible.

ADDRESS.

G. C. Creelman, LL.D., President, Ontario Agricultural College, Guelph.

I am sorry to say that engagements at home have prevented Mr. James from being here. I am sure it will be a great disappointment to you, I am not however going to sandwich myself in between two experts like Prof. Day and Prof. Zavitz, who is to follow, by going into any details in regard to the subject proposed by Mr. James, and for which he had no doubt prepared himself, and his paper, I have no doubt, will be distributed in the reports which go to all the members of the Farmers' Institutes. However, I would not have been true to my trust to Mr. James were I not to say one or two things to you at this time which I think may interest you, and certainly have a bearing upon the work of agriculture throughout the length and breadth of this Province of Ontario.

It has been my privilege for seven years to preside over the work that is conducted at the Ontario Agricultural College at Guelph, and, as president, to associate with a corps of experts, most of whom are familiar to you who are intimate with our work. There are some things which we have already decided upon, some experiments which we have ceased conducting, some results which have been attained year after year, one year confirming the other, that I feel that the time has come in this Province of Ontario when we should quit talking so much and try to get into the community where the man lives who is making mistakes, and if possible give him help on his own farm and enable him to put into practice such things as we have proven. I am thoroughly convinced of this one thing, that if the results of the experimental work which have cost so much in this Province

and in this Dominion and in the United States as to the varieties and dates of seeding, methods of cultivation, kinds of sprays and times of spraying, and attention to blossoms and blossoming, and so on, could be put into actual operation on every farm, we could very materially improve and develop the ordinary farm. The function of any Agricultural College is not only in the abstract but in the concrete to get back after all to the practical farmer on his own farm and see where you can help him; first, through the boys who come to us in such large numbers each year from the farms, and, secondly, through the work of the Experimental Union, confirmed by our professors' experiments and the other members of the staff conducting work along their own particular lines and carrying the results to the people. We have tried two ways of doing it. We have tried by publishing 30,000 copies of the reports of this meeting; 30,000 copies of the College Report and of the Live Stock Association, the Poultrymen and Dairymen's Association, and of other organizations and sending them directly to the members of the Farmers' Institutes throughout the length and breadth of the Province. In many instances these reports come into your home at a time when you are busy with other things. We have got to put them in the hands of the King's Printer, and he goes along and does the best he can, and turns them out so many each week and month, and you don't get very much out of them, and when you want them you don't get to them, and when the time of year comes for putting in practice those things contained in a particular report you have no report at hand. These reports are often not timely. Now to come to the point as to how we can best help the farmer on his own farm, we started three years ago the establishing of Agricultural Specialists in different counties, and we have already gone far enough, I believe, to justify any expense which we have gone to or which the Government has gone to or which the county has gone to in the establishing of these men in the particular counties. We can preach and publish, but until we get some missionary who will go with the gospel of agriculture to every farmer we are not going to get this Province of Ontario producing twice as much as it is doing at the present time from the ordinary farm. The reason I introduced this subject this afternoon is because a number of people are not familiar with the method, and those who haven't these men situated in the county in which they live, ought to make an effort through their High School Board towards influencing the powers that be to at least give you one of these agricultural specialists. I was down in the county of Lanark last winter, where we have one of these men located in the town of Perth. They had a short course in stock judging for two or three days and I was there to help out, and during the stock judging in the afternoon one of the older men in the audience who had listened very carefully, who had been watching the work and who had been an energetic supporter of this young man, came over and said, "You are Creelman from the Agricultural College?" I said, "Yes." He said, "It has never done anything for us." I said, "I am sorry for that. Is there any way in which we can help you?" He said, "I don't know any way you can help us at all; I don't know whether you are any good up there at all; you are a long way from us: you don't get into touch with us. I think the Government is spending a great deal of money in maintaining an institution which is not much use to the farmers." I thanked him, and asked him if there was any way in which we could help him. He said, "We don't want any help." I said, "Why?" He said, "We have got a young man now who has been with us for nearly three years," and he said, "That man is worth more to us than your Agricultural College and all of them in the Dominion anywhere." He said, "If you had a few young men like that on your staff you might expect to accomplish something." I shook him by

the hand and said, "I thank you for that statement, because it demonstrates to me that there are young men with scientific knowledge of the business who can go into the counties and help out the farmer on his own land." To that man Prof. Zavitz or Prof. Day didn't mean anything. That man had gotten all his inspiration and all his instruction on the lines in which he was engaged that day from these two particular men who are going to address you on this particular afternoon. These young specialists have an office in the town, but are not "stuck on themselves" and stay there day and night. They have a chance to exhibit in the window at the different seasons of the year the best kinds of grain and grasses and forage crops and roots and seeds after they have been tried and after they have been recommended by an experimentalist, and they are there for the farmer to see as he passes to and from market; there is a reading-room inside with all the agricultural papers. Then he makes a nucleus for the formation of a poultry club, a farmers' club, a dairymen's association, or a local association of any kind which cannot help but be useful and instrumental in helping that particular neighborhood along the lines on which these particular people are working. It wholly gets over the difficulty of the farmer not being in the right position to sit down and write when he has a question he would like to ask, and when he gets it written the stamp isn't there, and the Professor that the man wants to reach is 100 or 200 miles away, or when he has got a weed he wants to identify he digs it up, and he can't think of the name of the man at the College to whom to send it and the thing is not done, and the weed creeps on. If he had a man in the community to whom he could carry that weed how much better it would be, and I believe it would come nearer carrying to the people this thing which has been absolutely proven, and will come closer to reaching the indifferent farmer than anything we could do. I don't think there is much danger about the man who is here or the man who will go down in his pocket and buy a ticket and come to the Winter Fair and sit here all the afternoon and listen to the men tell of these things. I don't think you would do that if you weren't interested in your subject and in your business, but the indifferent farmers who grow weeds and who will breed from a grade bull, who are careless about ordinary things, who are careless all about the place are the people who bring down the price of your lands and who are a general nuisance; those are the men we want to reach. I don't believe any amount of writing or preaching will reach those men. I don't believe we can reach those fellows from the Agricultural College without the help of these specialists who will show them how to drive the plow, where they can get better seed stock and tell them how much they will have to pay for it and, if necessary, sit down and write a letter to the man who makes tile and can give them a plan of their farm so that they can drain it themselves.

Then I am glad to say, as President of the College, that it gives me great pleasure to find occupation for a lot of these young men in Canada instead of them going to the United States. The Agricultural College at Guelph for forty years has had a good name; for the last ten years it has had an especially good name. We don't know where we get our advertising, but even American students come to us. and we have been turning out a lot of young men who when they graduated had not farms to go to. We had the criticism made, "Your boys don't go back to the farm." That is not fair, because most of them do; but supposing a young man came to the College from a farm, and there were two or three younger brothers following him up, and there was only one hundred acres to divide between them. That boy was offered a position in our live stock department, and he took that position to earn money legitimately to buy a farm on which to farm. I am

pleased to say some of them are doing that now, but too many of them are looking to the United States, and in this way by establishing agricultural specialists in the country we can take your boys and after four years at College we can turn out young men and put them into these different counties where they may help the individual farmer on his own farm.

Colonel Talbot, the founder of the Talbot district, which is really all of Southwestern Ontario, in 1825 advocating Ontario as a home for British settlers, made this statement in England to an assembly of Englishmen: "In Upper Canada the farmers sow one bushel per acre of wheat and reap from 35 to 40 bushels per acre, whereas in England the farmers sow from two to three bushels per acre and do well to get 25 bushels in return." I want to say if that were the case in 1825 it has pretty nearly reversed itself now. So that the farmer in the Province of Ontario sows more than a bushel to the acre and gets less than 25 bushels to the acre, whereas in England the average production is at least 30 bushels per acre. I think the Agricultural College ought to jump into a breach like that. We say our fathers were fools because they went to work and bled the soil of its nourishment and took bigger crops off it than they should. At the Agricultural College on the Experimental Farm we have been conducting a series of careful experiments, the results of which if put into practice will bring us back to where we were in the time of Colonel Talbot. In the sowing of grains in the spring, I am told from the report of the Secretary of the Experimental Union after 20 years careful testing of the sowing of spring wheat, oats, barley and peas in the order named one week apart that the average result for 20 years has been a yield of 40.8 bushels per acre. For the same twenty years, sowing peas, spring wheat, barley and oats in that order a yield was obtained of only 35.1 bushels per acre, or a difference of 5.8 or more than five and a half bushels per acre due to the order of seeding one week apart. That means if the first order were used instead of the second order there would be a gain to the Province of Ontario of 55,000,000 bushels of grain from those four crops alone in this Province every year. Yet a great many farmers do not stop to think; they make up their mind in the fall what field they are going to put in wheat, peas and oats, rather than find out exactly, from long years of experiment when these different grains could best be planted, and find out that it would be better to wait a week and have their lands ready for the proposed crops.

We find out in ordinary sowing, over a number of years' experiments that there is a difference between taking wheat from the fanning mill and sowing it after cleaning it as well as you can with the machinery you have on the farm, and taking that seed and selecting it from the ordinary bin or from the ordinary fanning mill, and throwing away the small grains and taking only the large ones. By doing that we got a difference of nearly twenty per cent. each year, year after year. Is there any business that will stand a falling off of twenty per cent. in its profits, where small attention would bring about these results?

We used to think poultry was too small a business for the man farmer to pay any attention to; we used to think strawberries and raspberries was too small a business. Unless a fruit grower could grow apples, pears, peaches, grapes, he was a gardener, but not a farmer, the time has come when this is all changed. Now the little things count. We have not got to take a lot of our time each winter to cut down trees and stumps and in the spring to gather up the stones; we have got to devote nearly all of our time to growing things and must keep our hired man by the year, and if we can keep him busy cutting off ten, twenty and twenty-

five per cent. of the expenses here and there we will come nearer to getting that 100 per cent. that I am hoping to see in the future.

In the little country of Sweden which has an inhospitable climate, which has nothing like as good climate as the Province of Ontario, which has not as good soil acre for acre, because of its trials and tribulations it has come forward until our Deputy Minister would have told you had he been here that he saw whole fields of wheat, 100 acres or more in a field producing over 70 bushels per acre, and one field producing 90. Can you imagine a field in Ontario doing that? Not until we hand pick our grain, and until we have saved our grain for the next year with only the largest and best taken out of it, and that planted, and that again until we get a pedigreed seed, just the same as get a pedigreed animal. "Like produces like." If we sow small shrunken or broken seeds we are going to get only an ordinary crop. The time has come when the farmer should start to put these things into practice if they are going to justify the amount of money which has been spent on the College during all these years.

I thank you very much for giving me some of Mr. James' time to speak to you this afternoon.

PASTURES AND SUPPLEMENTARY FODDER CROPS.

C. A. Zavitz, Professor of Field Husbandry, Agricultural College, Guelph.

It is interesting to note that both the pasture and the hay crops of Ontario showed a gradual increase for the ten years from 1898 to 1907, and that there has been a gradual decrease in the grass lands of Ontario during the last two or three years. According to the reports of the Ontario Bureau of Industries, the grass lands of this Province were increased by 1,427,764 acres from the years 1898 to 1908, but they have been increased by 225,577 acres during the past two years. For several years in Ontario there was an evident inclination to group small farms into larger ones and to increase the areas devoted to pasture. The tendency at the present time, however, appears to be a sub-division of the larger farms into smaller ones and the adoption of a more intensive system of agriculture. There is probably no branch of farming in Ontario in which there is a greater need or a greater opportunity for improvement than can be found in connection with our grass lands, of which we have over six million acres. Of this area, over three million acres are used for pasture purposes annually. Both the quality of the pasture and the quantity per acre should be greatly increased. Timothy is not a particularly good pasture grass, and yet it is used more extensively than any other variety. I wish to state very clearly that in my opinion there are far too many old timothy pastures in this Province.

With the object of getting information of practical value, a large number of varieties of grasses, clovers, and grains have been tested at the Ontario Agricultural College both singly and in combination for the production of pasture. The results which have accumulated from these experiments during the past twenty-five years are interesting and important. They show us that various mixtures can be used to good advantage in fulfilling certain requirements. For this short discussion I wish to present to you a few of the mixtures of grasses which might be used by farmers, according to their various requirements.

A Pasture for one Year. A farmer sometimes realizes either in the autumn or in the early spring that his pastures will be quite inadequate for the purposes

desired during the coming season. Under such circumstances, he is anxious to know the best way to supplement his present pasture lands. One of the ways in which this can be done is to sow a crop in the spring which can be used for pasture purposes in the same year in which it is sown. After testing seventeen crops separately and six different combinations within the last fifteen years, we are now in a position to state that the following mixture has been used during the past few years with much satisfaction:

Oats	51	lbs. per acre.
Early Amber Sugar Cane	30	"
Common Red Clover	7	"
Total	88	"

The oats and the sugar cane can be mixed together and sown from the grain box of the seed drill, and the clover can be sown from the grass seed box placed in front of the tubes of the drill. If this mixture is sown during the first week in May, it is usually ready for pasture about the 20th of June, or six weeks after the seed is sown. The oats are early and rapid in growth; the sugar cane is later, stools well, and thrives in hot weather; and the clover forms the principal pasture in the autumn. All varieties are readily eaten by the animals, especially the oats and the sugar cane. If desirable, the clover may be allowed to remain over winter to furnish one or two cuttings in the following year. The tramping by the cattle has not caused any marked degree of injury either to the plants or to the soil. During each of the past five years, we have had eight or nine acres of this pasture which has carried more than one two-year old steer per acre. The animals have thrived splendidly, keeping in the best of health, and gaining on the average about two pounds per day.

A Pasture for two or More Years. It is a common practice among farmers to seed with their grain Timothy and Common Red Clover, and after taking off one crop of hay, to use the land for pasture until it is again plowed. The clover soon disappears and the timothy forms a comparatively poor pasture, especially in dry seasons. Some of the most important European grasses when grown in Ontario are very hardy and will withstand our hot, dry summers much better than the Timothy. The following mixture is suggested as a very satisfactory one for average conditions when a pasture is required for two, three, four, or five years.

Red Clover	6	lbs. per acre.
Alsike Clover	3	"
Meadow Fescue	3	"
Orchard Grass	3	"
Timothy	3	"
Total	18	"

This mixture can be sown in the spring of the year either with or without a grain crop. It should be sown in front of the tube drill; the clover and the timothy from the grass seed box, and the orchard grass and the meadow fescue by hand. It could be used as a hay crop the following year and for pasture afterwards. In comparison with timothy, this mixture will start earlier in the spring, produce a greater growth in the hot, dry month of the summer, and furnish a more abundant growth of leaves in the autumn.

Permanent Pasture Mixture. As time advances, I believe that permanent pastures will be used more and more in Ontario as our best farmers realize their value. Land, which is not required in the regular rotation of the farm, can often

be seeded with a permanent pasture mixture to excellent advantage. From more than twenty years' work in testing different varieties of grasses and clovers both singly and in combination, I would suggest the following mixture for a permanent pasture, under average conditions of soil, drainage and climate.

Orchard Grass	4	lbs. per acre.
Meadow Fescue	4	"
Tall Oat Grass	3	"
Meadow Foxtail	2	"
Timothy	2	"
Alsike Clover	2	"
White or Dutch Clover	2	"
Alfalfa or Lucerne	5	"
Total	24	"

In Europe, it is very common for the farmers to use 45, 48, or 50 pounds per acre of permanent pasture mixtures. Our own seedmen usually recommend a much heavier mixture than is here given. We have been very careful, however, to recommend nothing but some of the hardiest and most vigorous grasses, believing that in a short time some of the smaller grasses, such as the Kentucky Blue Grass, the Canadian Blue Grass, and the Red Top will gradually work in amongst the larger and more vigorous growers, as these varieties grow naturally in Ontario.

As in the case of the mixture previously referred to, the pasture mixture can be sown in the early spring either with or without a grain crop. It is better for the permanent pasture seeding to follow some cultivated crop which has been carefully looked after during the previous season. If the seed is sown alone, the tops of the plants should be cut occasionally during the summer and allowed to lie on the ground as a mulch. If a nurse crop is used, about one bushel of barley or wheat per acre is recommended. As a rule, oats do not form a good nurse crop for a permanent pasture mixture. The seed for the permanent pasture should be sown in front and not behind the tube drill. Some of the finer seeds can be sown from the grass seed box and the others by hand.

Such a mixture as this, when once well established on suitable land, should produce a good pasture, appetizing to the animals, excellent in quality, abundant in growth and permanent in character.

Supplementary Fodder Crops. There are but few farmers in Ontario who can afford to neglect the raising of fodder crops to supplement the pasture lands. While I claim very strongly that our pasture lands should be greatly improved in this Province, I also wish to emphasize very emphatically the importance of supplementing those pastures with the best kinds of fodder crops. We frequently have hot, dry periods during the summer seasons which greatly reduces the amount of animal food produced from the pasture fields. If provision is not made, there is often a great loss in the flow of milk of the dairy herd, in the vigorous growth of young stock, and the satisfactory increase in the weights of the fattening animals. A wise farmer will make careful provision to supplement his pastures either by the growing of summer fodders, or by furnishing a supply of silage which can be used when required in the summer season. There are a number of supplementary feeds which can be used to advantage, a few of which are as follows: (1) Alfalfa, (2) A mixture of oats and peas, (3) Millet, (4) Corn.

Alfalfa as a Green Fodder Crop. The growth of Alfalfa in Ontario has been increasing during the past few years. It can be used to excellent advantage for the production of hay, of green fodder, and of seed. As a green fodder crop to supplement the pasture lands, it is one of the very best. The growth is usually quite large and is continuous throughout the season; its stooling properties are

excellent; it will stand two, three, or four cuttings in one year; and it furnishes a large amount of feed which is both palatable and nutritious. As Alfalfa is a perennial crop, it possesses a great advantage of furnishing green fodder for several years in succession without re-seeding. It is exceedingly easy on the land, as so much of its valuable mineral matter is obtained from the subsoil, and of its nitrogen from the atmosphere. As a green fodder, it is relished by practically all kinds of farm stock. The fodder is so rich in flesh forming constituents that it becomes particularly valuable as a feed in the summer when the pasture lands are comparatively light in productiveness.

A Mixed Crop as a Green Fodder. Numerous experiments have been conducted at the Ontario Agricultural College in testing the comparative yields of oats, barley, spring wheat, and peas both separately and in combination for the production of green fodder. Very satisfactory results have been obtained from the mixtures as compared with the same grains grown separately. Of the different mixtures used, a combination of oats and peas has given the best satisfaction.

Of the different proportions of oats and peas which have been tested, it has been found that two bushels of oats and one bushel of peas has given a large yield of crop which is of excellent quality. It is important, however, to select those varieties most suitable for the desired results. Such varieties as the Siberian or the Banner oats, and the Prussian Blue or the Golden Vine peas work nicely together. The oats are of good length of straw and are quite productive. The peas produce long slender vines which are not so apt to lodge as some of the other varieties. All these grains are ready for cutting as green fodder at about the same time. In the six experiments conducted in duplicate in each of six years, it was found that the mixture here referred to produced a crop, 96 per cent. of which was standing at the time it was ready to cut for green fodder.

Not only is the mixture referred to abundant in growth, but it is of good feeding quality. The oats furnish a large amount of carbohydrates, or the heat and fat forming constituents, and the peas a large quantity of protein, or the flesh forming constituents; hence a combination of these two crops forms a food ration in which the different constituents are very well balanced. This mixture can be sown at two or three times in the spring, allowing from ten days to two weeks between each two seedings, and the season in which the crop is available is thereby considerably lengthened. One great advantage in growing a crop of this kind is the fact that it can be used in so many different ways. If the weather conditions are favorable and the growth of pasture is abundant and the green fodder is not required, the crop can be cut and cured as hay and fed in the winter season. If it is not required for either the production of green fodder or of hay, it can be allowed to ripen and can then be threshed in the winter, and the grain of the oats and the peas can be ground together and used in the form of meal.

In some sections, Common Spring vetches have been used in the place of the peas. In the experiments at Guelph we have obtained rather better results however, from oats and peas than we have from oats and vetches. Those desiring to use the vetches could sow either one bushel of the vetches or one-half bushel of peas and one-half bushel of vetches with two bushels of oats per acre.

Millet as a Green Fodder Crop. Millet does not, as a rule, thrive well when sown in the early spring and its growth is not as rapid as either that of Alfalfa or of the mixture of oats and peas. As a green fodder crop, I consider millet of minor importance. Of the various varieties grown at Guelph, the greatest yield per acre of green fodder has been obtained from the Japanese Pan-

icle variety. The plants are tall and upright in their growth, produce an abundance of leaves, and furnish a large yield per acre.

Fodder Corn. As a supplementary green fodder crop, corn is sometimes used to good advantage in the latter part of the season. Owing to the late time of planting corn, however, and to its slow growth during the earlier parts of its existence, it is usually not a very valuable crop to supplement the pasture lands. In Ontario, it is frequently in the months of June or July that the hot, dry weather occurs and that the pasture lands become deficient in growth. Occasionally, however, a drouth occurs in the latter part of the season, especially in August or the beginning of September, and it is well to have a good supply of fodder corn which could be cut for feeding the stock, if required at that season of the year. As in the case of all the other crops here referred to, if it is not required to supplement the pasture, it can be devoted to other purposes to excellent advantage.

In a Province like Ontario, where agriculture occupies such an important place and in which the live-stock industry is being so largely developed, it should be the aim of every farmer to make the very most of his soil. The pastures should be greatly increased in quantity and in quality. Careful provision, however, should be made to supplement the pasture lands by furnishing suitable green fodder crops when required in the summer season. If this important branch of the work were properly looked after, it would make a tremendous difference in the development of the live-stock industry and in the financial progress of the agriculture of Ontario.

Q.—Is this mixture of oats, sugar cane and red clover supposed to put on beef better than rape?

A.—No, I don't know as it would, but rape is an autumn pasture. This will come on in a hot, dry season, we can't compare the two exactly.

Q.—Won't the tramping of sugar cane kill it off?

A.—No, not very much. The sugar cane comes on well and tramping doesn't seem to injure the clover very much.

Q.—Would that mixture do for cows?

A.—With cows it would do splendidly. I think it is an excellent mixture for cows. We are able to keep a little over one steer per acre, and they have gained over two pounds per head.

Q.—Will the mixture thrive on a timothy sod?

A.—I don't know as it would quite so well as corn, or roots or potatoes would do probably, but I don't see why it wouldn't do pretty well on timothy sod.

Q.—Would you get better increase on this grass than on another grass?

A.—I am not in a position to answer that. I know two years ago we brought steers from three or four miles down the road where they had been pasturing on blue grass. The man who had them said he was delighted with the mixture. He said the steers on that pasture were doing better than on the blue grass.

Q.—How many months could you pasture cattle on that?

A.—If the season is favorable, from the latter part of June until the autumn.

Q.—Referring to the permanent pasture mixture, would the orchard grass kill out the other grass?

A.—No.

Q.—Which one of the grasses will take the lead in growth?

A.—I think the tall oat grass will take the lead and probably give the greatest amount of pasture in the summer. I think I would take out the tall oat grass on wet lands, and, instead of the alfalfa, put in a little more orchard grass and two

or three pounds of red top and one or two more pounds of alsike clover. A great many people are finding splendid results from alfalfa on heavy clay soil. Never sow this mixture on pasture land without plowing. You want to put this mixture in when the seed bed is in the very best condition possible.

Q.—Would you sow that with the disc drill?

A.—You can use the disc drill. With reference to supplementary fodder crops I wish to emphasize particularly that we should not only improve our pasture lands in Ontario, but, no matter how well we have those improved, we should under practically all circumstances be prepared for a hot, dry time in the summer by having supplementary fodder. The two I wish to emphasize particularly are alfalfa and a mixture of peas and oats, or peas and vetches is very valuable.

Q.—Will alfalfa used for pastures injure the flavor of the butter?

A.—I don't think it will injure the flavor any more than our red clover.

Q.—How much would you sow alone of alfalfa?

A.—About twenty pounds of seed per acre, either with or without a nurse crop. We found oats and vetches didn't answer quite as well.

Q.—What would you recommend to sow on a fallow that is burnt over in the spring, right in amongst the stumps?

A.—I think possibly it would be as well to sow rape broadcast. Sow it at the rate of about four or five pounds of seed per acre. It will give on an average about twelve or fifteen tons per acre, and it is relished by sheep and hogs and young cattle. It is not so good for dairy cows because it taints the milk.

Q.—Is the alfalfa root liable to be injurious to tiled land?

A.—I have never had any direct proof that it is. I have heard people say they believed it did injure it; I don't think it does. It will not thrive in water. If you get tile near a willow tree a root will go in there and begin to branch and will fill it full. I don't believe alfalfa will do that.

GROWING ROOTS.

JOHN FIXTER, FARM SUPERINTENDENT, MACDONALD COLLEGE, QUE.

The importance of roots for the economical feeding of all kinds of live stock is long past the experimental stage. Dairymen and beef-producers find that when roots are fed animals keep in better condition, and the flow of milk and the production of flesh increases with lessened cost. Poultry-keepers and hog-raisers also find that when there is no grass roots are the best and cheapest substitute. There is nothing fed to animals that is more relished. Roots appear to act as a tonic and help to make all other dry feed palatable. There is about 90 per cent. of water in roots, but this water seems to have a most beneficial effect upon the digestion of the animals. The feeding of roots will enable the feeder to diminish the quantity of meal in the ration, thus lessening the cost of production, as meal is much more expensive. Eight pounds of roots are equivalent to one pound of meal. Roots have a corrective effect on all animals which are being forced, especially with cows which are producing large quantities of milk and with steers which are putting on large quantities of flesh.

Roots may be successfully grown throughout Canada. The last Dominion census statistics report an acreage of 236,622 acres, with an average yield of 402.36 bushels per acre, valued at $21,444,000. On the Macdonald College farm the aver-

age yield was 1,009 bushels, the highest yield was 1,150 bushels per acre, costing about 5½ cents per bushel. If the crop of the Dominion had been equal to the one grown on the College farm, the value would have been $53,823,000. This is more than double the amount of the Dominion yield, and yet does not reach the limit of productivity. Farmers might, with profit, devote larger acreage to the growing of roots.

Soil. Roots will grow on all soils that contain a reasonable amount of plant food and where the water does not come too near the surface. Should the field chosen have different kinds of soil, select the light soil for carrots, the medium for mangels or sugar mangels, and the heavy for turnips. Mangels or sugar mangels usually give good crops on peaty soil, when a light coating of barnyard manure has been applied.

Place in the Rotation. Mangels, carrots, turnips or sugar mangels do best when sown on an overturned clover sod. If possible, select a field that has had but one season's hay crop taken off. The root will then have the benefit of the fertilizing elements of the clover roots, which in one acre of average clover sod should be equal to the amount of nitrogen, phosphoric acid and potash contained in 12 to 15 tons of barnyard manure.

Preparation of the Soil. Previous summer, or after-harvest cultivation is advised. Immediately after removing the hay crop, plow very shallow, roll, disc harrow and harrow sufficiently to make a fine surface and keep down all plant growth until autumn. This can be accomplished by keeping the cultivator going at intervals on very warm sunny days; each time going over the field set the cultivator a little deeper, so that the last cultivation will be at least 8in. to 10in. deep. If manure is then applied rib up the land in ribs two feet apart, and leave until spring. If no manure is applied the land may either be ribbed or thoroughly plowed and well set up to permit action of the winter frost. Another and more profitable way of preparing the soil is as follows: after the hay crop is removed, plow the land four to five inches deep; roll with a heavy land roller a sufficient number of times to thoroughly pack the soil, next disc harrow, and harrow thoroughly, then sow the field with rape or white turnips in rows wide enough apart to cultivate between them. The cultivator should be kept going at short intervals to destroy and prevent the growth of weeds and other vegetation. This cultivation improves the physical condition of the soil, by fining the soil and extending the feeding area for roots and aids in the conservation of moisture. By this method the land will be returning a profit and the soil will be prepared for the root crop to follow. With either method of preparation deep tillage in the autumn is advisable as a general rule the ordinary plow should never go deeper than to turn over the surface or dark-colored layer which contains most of the humus or plant food. If deeper plowing is done, and the raw subsoil brought to the surface, the soil will become less productive. It is, however, desirable to loosen the subsoil 8 to 10 inches deep, so that rain water will percolate into the subsoil and thus increase its water-holding capacity, and allow the air free access into the soil to warm it and produce the necessary conditions for the bacteria to act on the vegetable matter and make it available for plant food. Another benefit in loosening the subsoil is to allow the rootlets of deep-rooted plants to penetrate and feed on the mineral matter contained in the subsoil.

Manuring. Should you have any manure on hand in the autumn a light dressing, say twelve to fifteen tons per acre should be applied. I would advise plowing a narrow furrow and setting it well up so that the manure can be seen from the top of the furrow and be evently distributed throughout. This, along

with the good clean clover sod that has been plowed under, should be equal to about 22 to 25 tons of manure per acre. If no manure is on hand in the autumn, I should advise a coating of green or fresh manure being applied during the winter. If possible draw direct from the stable to the field. Should there be no snow or little snow, spread from the wagon or the manure spreader, the latter is preferable as it will do the work much more evenly than can be done by hand. Should the snow be deep, or should there be any danger of washing away, put the manure in small piles about eight yards apart each way and spread as soon as the snow is gone in spring time. It is essential to have the manure spread early so that it will get incorporated into the soil and will be turned under much more easily when plowing. The spring plowing should be shallow, and as short a time as possible before the planting season. If the land has been ribbed or drilled in the autumn the ribs should be split with the same plow as they were set up with and a very fine tilth made before sowing.

Drilling or Sowing on the Flat. Drilling is preferred, as it is very much easier to work at the young plants when thinning and better for the roots to have the soil slightly worked away, instead of covering them make the drills 24 inches apart, then roll with the heavy land roller, thus flattening them down to about one-third of their original height; the field should then be in good condition for sowing.

Varieties. Among the numerous varieties, the following will be found to give good results:

Mangels. The Mammoth Long Red types we recommend, as they have more feeding value and usually give heavier crops than the tankards or globes. Sow six to eight pounds of seed per acre.

Sugar Mangels—White or Rosy. This is a new and distinct variety, being a cross between the mangel and the sugar beet. It contains the rich qualities of the sugar beet, with heavy production, size, and keeping qualities of the mangel. The roots are solid and rich in feeding value.

Swedes. Prize Purple Top, Hall's Westbury, Magnum Bonum, Kangaroo, Hartley's Bronze Top, are all excelleent varieties. Sow three or four pounds of seed per acre.

Turnips. Fall Varieties—Grey Stone, Imperial Green Globe, Purple Top, Mammoth, Cow Horn, and Red Top White Globe. These varieties are not as good keepers as swedes and should be fed off in the early part of the season. Sow three to four pounds of seed per acre.

Carrots. Improved Short White—Mammoth White Intermediate, Large White Vosges. Red Carrots—Guerand or Ox Heart, Early Gem, all are heavy croppers and have excellent feeding qualities. Sow 2½ to 3½ pounds of seed per acre.

Less seed in all cases will do if all grew and produced strong healthy plants but in order to have a perfect stand I should advise the amounts named. More failures of securing a good catch of roots are due to not sowing enough seed than to over-seeding or almost any other cause. It is much easier and cheaper to thin out the plants than to transplant them.

Machines for Sowing. To the best of my knowledge there is no satisfactory horse-drawn seeding machine. Very good results are obtained by the use of the hand machine made with cups inside the drum. The cups fill with seed as the machine revolves and deposit the seed at the opening, while the smooth drum horse machine very often clogs and thus causes blanks in the row. Manufacturers making the horse-machine should make them more like the hand-machine. All that is required is to enlarge the seed boxes to about twice their present size and to have a

cup opposite each opening so that it will fill each time the machine revolves and place the seed in its proper place.

Cultivation. Early cultivation of the young plants is very essential. Just as soon as the plants appear through the surface and the row can be followed begin cultivating. If the rows have all been sown exactly the same distance apart, the single horse-cultivator may be used. In order to arrange the horse-cultivator to do the best work when the plants are small place the wing mouldboards one on each of the inside of the outside legs with the points upwards, as they cut much cleaner and do not disturb the plants as much as if the points were turned down. It may be necessary to remove some of the centre points when the plants are small. If the horse-cultivator cannot be made to cut clean to within one inch of the plants use the hand wheel hoe. This little machine may be arranged to cut within half an inch of the plants. If the land is free from stone, stubble or litter, use the six-inch blades. If stony or lumpy use the two small plows, cutting quite close on each side of the row of plants. Early cultivation loosens the surface soil that has been packed by the roller and any crust formed by frequent showers, thus allowing the air to enter, warming the soil, retarding evaporation by making a dust blanket, destroying many small weeds, and forcing the growth of roots.

Thinning and Hoeing. For mangels, sugar mangels or turnips, commence thinning when the plants are from one and a-half to two inches high, leaving the plants ten to twelve inches apart in the row. Thinning is more economically done with the hoe than by hand and a special hoe is necessary, which may be made from an ordinary weeding hoe with the neck straightened a very little so that the hoe can be used to push or pull. The hoe should be cut to a length of 2½ inches and the ends squared and both ends and blade sharpened. Square corners are essential, as they help to separate the plants quickly. A file should be carried so that the hoe can be kept sharp. When thinning or hoeing carrots, mangels or turnips the operator should walk between the first and second rows from the one he is thinning, as the plants can be seen better from this distance than when working directly over the row. No stooping or hand thinning is necessary as the work can be done much more economically with the hoe.

Roots should also be hoed at least once after thinning, whether there are weeds or not, as it pulverises the soil between the plants, with the usual benefits of cultivating. Cultivating should begin when the plants are quite small and the cultivator should be kept going at short intervals until the leaves of the plants have covered the space between the rows.

Harvesting. Mangels and sugar mangels, growing as they do so much above ground and being thus exposed are more susceptible to frost than other roots. It is, therefore, necessary to begin pulling about October 15th. The date of pulling must be regulated according to locality; in some districts it may be necessary to pull a few days earlier and in other districts later. The roots should have as long a season of growth as possible, for the nearer the roots come to maturity the greater will be their feeding value, and they will keep better and later during the winter. If pulled too early they are apt to become soft and heated, and if frozen they will spoil in storage. The common practice and the most advisable in taking up mangels and sugar mangels which grow well up out of the ground is to pull them by hand. Each root is pulled with both hands, then all the tops are gathered together, and, with a sudden jerk, the tops are broken off. It is much better to break or twist the tops off by hand, for when topped with the knife they are more apt to decay. For convenience in loading into carts or wagons, throw four drills into one row, this is convenient for both pullers and loaders. If there is no danger of frost allow

the roots to remain on the ground twenty-four hours after being pulled and topped, as this will improve their keeping qualities by drying them, and any soil pulled will shake off much easier before being thrown into the root cellar. If there is any indication of frost roots should be either housed or covered with leaves, as a few degrees of frost will injure mangels after they are pulled. Should mangels get frost bitten allow them to remain in the field to thaw out before handling them, as the least handling when frozen will break the skin and encourage rot. Sugar beets and carrots are more difficult to harvest owing to their long underground roots. It is best to run a subsoil plow along one side of the row, loosening and cutting off some of the strong fibrous roots and thus enabling the puller to take up several tubers at one time. They are usually pulled and laid in rows to be topped with the knife and thrown into basket or boxes for convenience in loading. The time to harvest carrots and sugar beets in most districts is between October 20th and 30th.

Harvesting Turnips. There are several ways which are quite successful; one of the easiest is to top with the ordinary hoe and turn the roots out with a sharp-shared plough, with the mould-board removed. By striking the tops of two rows together, the turnips can be plainly seen, and if turned inward on the row of tops they are clearly visible for loading into the wagon or carts. Another plan is to top with the ordinary hoe and drag them out of the ground with the harrows, by harrowing across the drills, letting the harrows lap if necessary. This method answers well in sandy soil, but in clay soil the turnips are considerably injured, and, as a rule, there is more earth clinging to the roots than is desirable. With this plan the tops have all to be removed before harrowing. Where help can be secured, the old method of pulling and topping by hand is preferable: one stroke to cut the top root, the second stroke to cut the top off, and by a slight swing while cutting the tops four drills are thrown into one row for convenience in loading. Turnips should be left on the ground for a day or two after being pulled as they are not so easily injured by frost as other roots.

It is advisable to run them over a slatted chute, so as to sift out the earth. No tops should remain on the roots as they will soon decay and injure the roots. Where the roots drop into the cellar they are liable to heat, unless a ventilating shaft is first put in as close to the opening as possible, and running from the bottom to the top of the root cellar. There are two important matters in connection with the successful storing of roots. The first is to keep them sufficiently cool, the second to prevent them from freezing. Heat will spoil them as quickly as frost and *vice versa.*

Ventilation. The principle of ventilating the root cellar is the same as that required to cause a draught in a stove. There should be shafts made down outside the wall to enter at the level of the floor below, with large openings directly through the roof. The outside doors and windows should be kept open every day until there is danger of frost. To keep out the frost, have the root cellar at least two-thirds below the surface of the earth, then, about the 15th December, it may be necessary to bank up to the roof with stable manure.

Where there is no root cellar, or insufficient room, roots may be pitted successfully. Select a high, dry spot convenient to the buildings, mark out a pit the required length and about five feet wide, and excavate two or three feet deep, but if there is danger of water excavate only three or four inches. The earth should be laid along the sides for covering. Build roots up to a point three or four feet high, then cover with straw about four inches and with earth about eight inches. This covering is sufficient until about the middle of November. Then cover with

four or six inches of long stable manure and twelve inches of earth. To make provision against excessive frost, it is advisable to cover the pit the last of December with long stable manure. To ventilate the pit, take two boards one inch by six inches wide and six feet long, nail good strong strips of wood crossways up three feet, the other three feet to be boarded solid, leaving the top open until severe frost comes; then put a bunch of straw into the top to keep the frost out. These shafts should be in about every eight or ten feet apart along the pit, the slat work to extend through the roots to bottom of the pit.

If it is desired to keep the temperature of the pit an extra shaft may be put in to allow a thermometer to be raised and lowered, as it is very important to keep out frost and also to see that the roots are not over-heating.

The greatest success in growing and preserving roots will be obtained when the following are observed: Systematic rotation of crops, roots to follow a fresh clover sod. Manure once in the rotation, good drainage, thorough cultivation in preparation for the crop and after it is sown.

FEEDING OF ROOTS.

R. S. Stevenson, Ancaster.

I am not going to take up very much time talking about the feeding of roots. I am sure you have all been delighted with the address by Mr. Fixter. Mr. Grisdale, of the Experimental Farm, Ottawa, was to have taken part of this subject; but Mr. Grisdale said he couldn't get here and I asked Mr. Fixter if he could take up the part of the subject as to the growing and storage of roots. Mr. Fixter is qualified, I think, as well as any man in the Dominion to talk along that line, and I can assure you he not only talks but he does.

After we have grown this crop of roots the next question is how are we going to feed them, and will it pay us to grow roots? I have been feeding cattle for a great many years myself, and I have always been growing a large acreage of roots. I was one of the first men that ever had a silo in the township of Ancaster. We have found difficulty in keeping up the flow of milk. When our supply of roots ran out towards the spring of the year, there was nothing we could feed our cows that would keep the flow of milk up to the standard. There was no guess work about it, because we weighed the milk of our cows. That has proved conclusively to my mind it will pay us to grow roots. In the old country they consider the turnip crop as being the sheet anchor of British Agriculture. I think the silo has been boomed a little at the expense of the root crop. I am not a scientific man, but I think it will pay us farmers still to grow some roots. I know the labor question comes in, but Mr. Fixter told you he could grow a ton of mangels as cheaply as a ton of ensilage. I am satisfied from my own feeding that a ton of mangels or turnips is very much more valuable than a ton of ensilage for feeding cattle.

Q.—Do you mean the sugar or beet mangel?

Mr. Stevenson: Either one of them. I haven't grown very many of the sugar mangel yet. We used to grow the intermediate mangel. I have always been a great grower of Swede turnips and mangels, and comparing the two for the production of milk, the turnip has given us better results. Also last winter I fed beef cattle, and found the cattle seemed to do better on the turnips than on the

mangels. The analysis of the mangel I believe is a little higher than the turnip, so how to account for that I do not know. That of course is a little against the scientific analysis of the two roots.

As to the amount of roots to feed cattle, that depends a great deal upon the supply you may have. I have fed one animal at one time between four and five bushels of turnips a day; it was a big bull, and he grew and fattened wonderfully; that was an extreme case, but I think about a bushel per day is about right, that is, half a bushel of roots at a feed. The beauty of the root is you can feed your cattle as much as you like and you will never hurt them. When we are feeding cattle large quantities of grain in order to force them along, if we have plenty of roots to supplement we can feed a gread deal more grain. The roots enable the animal to digest the other food a great deal better.

As to the preparation of roots for feeding cattle, in speaking of turnips, if you train your cattle when young to eat turnips whole you will never have any trouble and never have to pulp the roots for those cattle. They will do much better on whole roots than on pulped roots. When an animal has the roots pulped for it, it will gulp those roots down quickly. If it has to scoop the turnip or mangel they become mixed thoroughly with the saliva in the animal's mouth and digest better. If a man has a lot of cheap coarse feed it will pay him under those conditions to pulp his roots and mix with the coarse feed. Anything we can do to lighten labor I think will pay us every time. We have abandoned the pulping of roots except in cases where we have an animal that has never been trained to eat them whole or an animal that is old.

Q.—Is not scooping hard on the teeth of sheep and cows?

Mr. Stevenson: I have never found any difficulty. I am not speaking of sheep.

Q.—Is it not better to feed roots or even grain, generally speaking, whole to young animals on account of the better digestion of the feed?

Mr. Stevenson: I think so. We found our calves always did better when we fed them whole oats instead of ground oats. For some reason the scooping of the turnip is better for them; they have got to get it mixed with the saliva.

Q.—What variety of Swede turnip do you sow?

Mr. Stevenson: We have a variety near where I live called the New Century, it is a type of the Westbury turnip. In getting your seed, Mr. Fixter told you to be very particular. I want to back up what he said, because I don't care how you prepare your ground if you are unfortunate enough to get some inferior seed and sow it on that beautiful field of yours you are not going to get the results, because all that seed, especially the mangel and turnip seed is grown on the continent of Europe and a great part of that seed is grown from roots taken indiscriminately, they are not selected. You can't pay too much to get good seed. because the amount it costs to sow an acre is so small that if a man tries to save a dollar he may sacrifice half his crop. Sow the turnips and mangels invariably in drills. I agree with Mr. Fixter's remarks as to sowing these seeds with the hand drill. If we were going to sow a large acreage we would sow part of them about the 10th of June and then sow the balance in about ten days. You can sow turnips up on well to the end of July and almost the first week in August and have good results.

Q.—How do you fight the lice that get on the turnips?

Mr. Stevenson: We have not been able to find anything that would overcome that difficulty.

A Voice: We have found soaking the seed in turpentine effectual.

Mr. Stevenson: This aphis does not bite, it is a sucking insect. One gentleman told me he had very good success in spraying them with salt and water.

Sowing white turnips for feed in the fall of the year is a good thing. If you have an acreage of one of those varieties of white turnips you can haul them down on a field and let the cattle eat them tops and all. They are one of the finest things to carry your cattle on to the winter.

Q.—Do you use any fertilizer?

Mr. Stevenson: A few years ago we were short of farm yard manure or stable manure; we didn't have enough, and we were going to grow a large root crop and I thought in order to get over the ground I would try a ton of commercial fertilizer; it cost me $35 or $37 a ton; we were told to put that on an acre; we put it on, and we put on our stable manure on the balance of the field, and from that day to this I never saw any results from that ton of fertilizer. We had a good crop of turnips on the piece alongside of it where the farmyard manure was.

THE GROWING AND THE FEEDING OF BARLEY.

C. A. Zavitz, Professor of Field Husbandry, O.A.C., Guelph.

Barley growing in Ontario has had a rather checkered career. Previous to the McKinley Bill of 1890, barley was grown extensively in this Province, and a considerable amount was shipped into the United States. The areas devoted to this crop in the eighties fluctuated considerably, owing undoubtedly to the variations in the market prices. We find, that in 1882 there were 848,617 acres, while in 1885 there were only 597,873 acres, and again in 1888 the area had increased to 895,432 acres, and in 1890 there was a decrease to 701,326 acres. After the passing of the McKinley Tariff there was a decrease in the acreage until 1898, at which time there were only 438,784 acres used for barley in the Province. From that time forward, however, there has been a considerable increase in the barley crop of the Province. Barley is now used quite extensively in the Province of Ontario for feeding purposes.

Areas of Barley and Yields Per Acre.

According to the reports of the Bureau of Industries for Ontario, we learn that in recent years there has been an increase not only in the number of acres devoted to the barley crop in this Province, but there has also been an actual increase in the average yeild of barley per acre. The following table gives the average number of acres of barley and the average yield of barley per acre in Ontario for each of three eight-year periods:

Periods.	Average number of Acres of Barley.	Average yield of Barley in bushels per acre.
1886 to 1893	686,859	24.0
1894 to 1901	502,223	27.1
1902 to 1909	733,608	31.0

One of the most interesting as well as important features of this table is the fact that during the last twenty-four years, there has been a considerable increase in the average yield of barley per acre throughout the Province. It will be seen from the figures here presented that the average yield of barley per acre for the eight years from 1902 to 1909 is fully twenty-nine per cent, greater than the average yield per acre for the eight years from 1886 to 1893. In the first period referred to, the yield per acre varied from 21 to 29.2 bushels, and in the last period from 27 to 34.3 bushels. With only one exception, the lowest yield per acre during the past eight years was greater than the yield per acre in any one of the eight years of the first period.

The Yield of Grain and of Digestible Nutrients per Acre Obtained from Barley in Comparison with Other Grain Crops in Ontario.

As carefully prepared statistics of farm crops in Ontario have been collected and compiled by the Bureau of Industries in Toronto in each of the past twenty-eight years, we have an opportunity of comparing the productiveness of the different grain crops grown in the Province. The yields of these grain crops, however, are presented in the form of bushels. As a general rule, farmers believe that oats will yield more bushel per acre than barley, and that barley, in turn, is likely to yield more bushels per acre than wheat. As there is a marked variation, however, in the weight per measured bushel of some of the grains, it is difficult for a person to get a correct comprehension of the productiveness of the different grains from a simple study of the number of bushels per acre. It is both interesting and instructive to compare the results of the different crops grown in Ontario under similar standards of measurements. It would be even more valuable to know the amount of digestible constituents produced per acre by the different classes of farm crops grown under average conditions. Both the chemical composition and the digestibility of our most common grains have received a considerable amount of study in a number of countries, especially in Germany and in the United States. I have, therefore, endeavoured to combine the average yields per acre of the different grain crops grown in Ontario, and the comparative amounts of the digestible nutriments of these different crops as ascertained by scientific investigation, by making use of the tables of digestible matter, as compiled by Armsby, Jordan, and others, and as printed by the Pennsylvania State College, by Bailey in his Cyclopedia, etc.:—

Crops.	Annual yields per acre for the 28 years.		Pounds of Digestible Nutriments per acre.	
	Bushels.	Pounds.	Protein.	*Carbohydrates.
Barley	27.7	1,330	116	920
Oats	35.6	1,210	111	644
Winter Wheat	20.8	1,248	89	880
Spring Wheat	15.9	954	72	668
Peas	19.4	1,164	219	623
Buckwheat	20.0	960	75	526
Rye	16.4	918	59	646

* The fat was reduced to its starch equivalent by multiplying by 2.25.

While the average yield of oats in Ontario for the last twenty-eight years has been 35.6 bushels in comparison with 27.7 bushels for barley, yet we observe that the barley has given an average of 120 pounds of grain per acre more than the oats. Of all the grains here reported, barley stands at the head of the list in productiveness, and even winter wheat has given a greater average yield of grain than oats by 38 pounds per acre.

The figures presented on the digestible nutriments per acre show that the amount of digestible protein produced by the field peas surpassed that produced by any of the other classes of grain. The barley and the oats do not vary greatly in this constituent. It will be noticed that the digestible carbohydrates of the barley amount to 920 pounds per acre, which is 276 pounds per acre more than those produced by the oats, and 40 pounds per acre more than those produced by any other class of grain here referred to.

Comments by Experimenters on Feeding Barley.

I take the liberty at this time to give a few quotations from reports of practical tests made at different places in comparing barley with other grains for feeding to farm animals of different classes.

For the results of two experiments conducted at Guelph in feeding dairy cows oats alone in comparison with oats and barley, the reader is referred to pages 135 to 137 of the Annual Report of the Ontario Agricultural College for 1909. From Professor G. E. Day's report here referred to I quote as follows:

"Although barley is not, as a rule, a particularly palatable food, still the cows, on the whole, seem to relish the mixture of oats and barley rather better than the ration of clear oats.

"In the first experiment the cows gave practically the same amounts of milk, yielding practically equal amounts of butter fat on the two rations. There is, it is true, a slight difference, but so slight that even a greater difference might occur from the same ration being fed throughout. In this experiment, therefore, the addition of one part of barley to two parts of oats did not apparently decrease the efficiency of the ration.

"In a second table it will be noted that the cows gave somewhat more milk and yielded more butter fat upon the mixture of oats and barley than upon oats alone. As milk producers, the two rations may be said to be practically equal, there being a very slight advantage in favor of the mixture of oats and barley."

From the 1910 revised edition of Prof. Henry's book on "Feeds and Feeding" I make the following quotation, as it gives in a very concise form the results of feeding barley in different countries:

"On the Pacific slope where corn or oats do not flourish in equal degree, barley is extensively used as a feed for animals. The horses of California are quite generally fed on rolled barley with wheat, oats, or barley hay for roughage. Barley is the common feed for dairy cows in Northern Europe. The Danes sow barley and oats together in the proportion of one part of barley to two of oats, the ground mixed grain from this crop being regarded as the best valuable feed for dairy cows and other stock. At the Virginia Station, calves made excellent gains on barley and skimmed milk, but corn proved cheaper. At the Washington Station, steers made cheaper gains on wheat than on barley and still cheaper on the two grains mixed. In Great Britain and Northern Europe, barley takes the place of corn for pork production, leading all grains in producing pork of fine quality, both as to hardness and flavor. The Iowa and Nebraska Stations used barley economically to supplant corn for hogs."

Results of Some Experiments in the Growing of Barley in Ontario

From experiments conducted at Guelph during the past twenty years, it has been clearly demonstrated that of the existing varieties of barley, the six-rowed surpassed the two-rowed barleys in productiveness. Some of the hulless varieties

have been good producers, but are not as satisfactory on the whole as the leading six-rowed varieties. All of the beardless barleys which have been grown, although comparatively early, stiff in the straw, and free from the beards, are comparatively light in both yield of grain per acre and in weight of grain per measured bushel. It will therefore be seen that of all the different barleys which have been grown in Ontario, the six-rowed varieties have given the best general satisfaction.

The Mandscheuri variety of six-rowed barley was imported by the College in the spring of 1889. It made a high record on the experimental plots at Guelph. When its value was ascertained, this variety was distributed over the Province through the medium of the Experimental Union. It is now grown on fully eighty per cent. of the barley lands of Ontario. The introduction of this variety is undoubtedtly responsible for a considerable amount of the increase in the yield of barley per acre over Ontario during the past few years. The O. A. C. Number 21 Barley is now taking the lead, however, and will likely be grown very extensively in a short time. This barley was originated from a single plant selected from among nearly 10,000 plants of the Mandscheuri barley grown in a nursery plot at the College in 1903. When carefully tested, it was distributed in small lots through the medium of the Experimental Union. According to the reports of the co-operative experimenters, the O. A. C. Number 21 Barley surpassed the Mandscheuri variety in length and strength of straw, in freedom from rust, and in yield per acre of both grain and straw. About 20,000 bushels of this barley were grown in Ontario in 1909 as the result of the small lots distributed throughout Ontario during the three years previous.

In experiments conducted at Guelph in the growing of barley, it has been found that a greater yield per acre has been obtained from large than from small seed, from plump than from shrunken seed, and from sound as compared with grain which has been broken or injured in the process of threshing.

An experiment was conducted in duplicate in each of six years by sowing barley on six different dates in the spring of the year, starting as early as the land was warm enough and dry enough to work to good advantage, and allowing one week between each two dates of seeding. The results show that the greatest average yield per acre was produced from the earliest date of seeding. For every day's delay after the first week was past there was a decrease of 53 pounds of barley per acre.

In various experiments which have been conducted in growing grains in mixture, it has been found that of all the different classes of grain which have been used in combination, the barley exerts the greatest influence in determining the yield of the crop. It has also been ascertained that a mixture of one bushel of barley and one bushel of oats per acre would give, on an average, over 200 pounds of grain per acre more than either one of these crops when grown separately.

Conclusions.

It will be seen from what has been said that barley is a very valuable crop in Ontario. It is increasing in the area used for the crop and in yield of grain per acre. It is a very heavy producer of grain which is comparatively rich in digestible nutrients. Although probably not quite as palatable when fed alone as some other feeds, when mixed with other grains it is apparently well relished by different classes of farm stock, and gives satisfactory results.

While it is true that barley does not usually produce quite as great a yield of straw per acre as oats or winter wheat, and that the beards on the barley are ob-

jectionable, it should, at the same time, be remembered that barley is not as exhaustive on the fertility of the soil as oats, wheat, or corn, and that it makes a most admirable nurse crop for alfalfa, common red clover, or a mixture of grasses and clovers for either hay or pasture production. In conclusion, I feel like advising even greater attention on the part of our farmers in the growing of this important crop in Ontario.

Q.—Take barley or oats for a horse, you wouldn't say that barley was preferable to oats?

A.—I think here in this country we get better results from oats than from barley when fed alone to horses. In digestible nutrients barley has it over the oats.

Q.—What are the objections to barley?

A.—It is a disagreeable crop to handle, owing to the beards; it is not quite as suitable for all kinds of land as oats; it does not seem to be as palatable as oats if fed alone, and it does not grow as much straw. Barley, however, is not as exhausting on the soil as either oats or wheat. It is unsuitable for feeding to a brood sow to produce milk.

Q.—Is there not an impression that barley is not a good food for dairy animals?

A.—There is that impression.

Q.—Is it a well-founded impression?

A.—I think the difficulty comes in the milk question from feeding barley alone; it should be fed in a mixture of shorts or something of that kind. The important point in the production of milk is to keep up the vitality. My impression is if we use barley in our mixtures we will get excellent results.

Q.—What is the relative value of a pound of protein and of carbohydrates?

A.—I consider by taking about one pound of digestible protein and five or six pounds of carbohydrates we get the most economical results for general feeding.

Q.—What advantage is there in sowing a mixed crop?

A.—I consider it a great advantage. We have found in six years' experiments that we have obtained a little over 200 pounds of grain per acre more from a mixture of oats and barley than from either grain sown by itself. I very strongly favor a mixture of oats and barley both for production of crop and for quality of crop that can be obtained. It is necessary to sow an early variety of oats with a six-rowed variety of barley so they will mature together.

Q.—As to sowing mixed grain, I have heard it said by parties that it wouldn't do to sow mixed grain together; that they should not be mixed each year?

A.—I do not think it makes one particle of difference so far as germination or production of seed is concerned, but we find we can get the best results by sowing a certain proportion. The best proportion with us is a bushel of each by weight per acre. When we thresh the crop we get a mixture that does not have the same proportion because the barley will increase more rapidly than the oats. There is no crop that will increase in a mixture so rapidly as barley, according to our experiments. If you sow the crop grown in the mixture you are not using the best proportions.

Q.—Do you sow barley very shallow?

A.—Yes, if you get it in in the early spring sow it very shallow.

Q.—Did you ever use peas in the mixture?

A.—A mixture of oats and peas has given us the best results as a green fodder crop, but not as a grain crop.

Q.—Isn't the feeding value of peas greater than that of any of the other grains, the results of which are presented on your chart?

A.—Yes, I don't know but what it is. The peas are very high in digestible protein. Peas are a wonderful crop in Ontario. I am glad the weevil has largely disappeared. We are now increasing the growing of peas in Ontario.

Prof. Day: As to the feeding value of barley and peas, it will depend a good deal what you want it for. For instance, for purely fattening purposes, take it in the case of fattening hogs where you feed a grain ration entirely—that is when you are not feeding any bulky foods with it—I think you would find the barley more economical than peas. That is, taking these yields referred to in the chart, there would not be that large proportion of carbohydrates to protein in that case that there would be if you were feeding straw and ensilage and so on with the grain ration. If you wanted a crop to feed the dairy cows for the purpose of narrowing the rations then there is no question about it, peas would be worth a great deal more than barley for that purpose. It depends a great deal on the purpose. Another thing about peas for hogs, they are more palatable, hogs like them better than barley; and the best thing we find to feed with barley is wheat middlings.

Q.—Oats would be all right?

A.—Yes, except I would rather have middlings for fattening hogs. Oats are pretty expensive and there is so much hull in the oats that it has not a very high fattening value for hogs.

Q.—How is Buckwheat?

A.—I couldn't say much about it for that purpose; I have never fed it in my life. I would like to make a suggestion here before I sit down, and that is, in feeding any kind of grain we are too apt to take measure instead of weight. Now, it is weight that counts. A man is in the habit of feeding three gallons of meal a day to his steers. It doesn't matter what mixture you give him he will go on feeding that amount per day and he thinks he ought to get the same results. If he doesn't he thinks the one is better than the other. If he would take weight instead of measure he would find there was not such a great difference between the feeding value of these grains. Bran is not considered of much value for feeding steers, but if you feed it by weight you will find that it has a value. Bran is laxative in character, and bran mixed with barley will make not only more palatable food for steers, but will improve the feeding value. There are very few foods of any kind that are at their best when fed alone, but they are all useful to combine, and it depends upon the purpose for which you require the food as to which will be the most valuable for that particular purpose. A great deal of the difficulty, I believe, with barley as a feed for horses is that the chances are that a man will feed barley as heavy as oats, and the result is that it knocks them out. I like barley ground pretty fine. For little pigs at first we use clear middlings. When they get about three months old we generally keep increasing the proportion of barley until we get say three or four parts of barley to one of middlings. I don't care for very much barley in the ration of a brood sow. I believe it can be used in moderation, but I would far rather take middlings and oats. I think the barley is more apt to cause constipation. I think there is the great difficulty. For sows before farrowing I don't care for barley at all. The great trouble with cows is that they don't care a great deal for barley alone. If you feed a large proportion of the barley in the ration they are liable to turn up their noses at it. When we fed about equal parts of barley and oats and got them accustomed to it, they ate it very well and I think gave us a little bit better returns than on oats alone.

If you were feeding alfalfa hay, which is very high in protein, nitrogenous matter, not feeding a great deal of ensilage, and you have some bran or something

of this sort, I don't know but what you might get just as good results probably from the linseed meal or oil cake as you would from cotton seed, but where you are feeding a ration that has a good deal of corn ensilage in it, then cotton seed would be more valuable, because it contains a larger percentage of protein. Do not feed cotton seed to calves or to pigs. Cotton seed meal is a food that really should be obtained under a guarantee, because it can be doctored. If you buy oil cake broken up into nut form you get practically a pure food, but I never like to buy the ground oil cake.

Q.—What kind of barley would you care to sow?

A.—The Mandscheuri barley is the one that has given good results throughout Ontario during the past dozen years. The O. A. C. No. 21 has made higher returns in recent years and is now the leading barley.

SEED CORN.

E. D. Eddy, Seed Branch, Department of Agriculture, Ottawa.

You may wonder why I am here at a Feeds and Feeding meeting to speak on The Seed, but I presume that in asking me to present this subject the directors had in mind the interdependence of one branch of agriculture on another. This is said to be an age of specialists, in agriculture as well as in other businesses and professions, but it is also an age of co-operation and unification. No matter how much of a specialist a farmer may be, he can not get away from the fact that the success of his specialty is dependent upon the other branches of his business. The dairyman must have grain and fodder for his cattle and he needs to find out all he can about crops and cultivation. The breeder also is vitally interested in how he can produce the most feed of the best quality at the lowest cost, and the general farmer is finding out more and more that his work is not finished when he has his crop harvested and threshed. The great lesson for him to learn is how to put that crop on the market on the hoof or in the milk-can and so increase his profits and at the same time the productive capacity of his farm. So in presenting the question of seed corn, I feel that the subject is quite in harmony with the general meeting, and in the few minutes at my disposal I will try to show you what some specialists in seed-growing are doing, and point out some features that may be of interest to the farmers who grow their own seed corn as well as to those who have to buy it.

In a breeders' meeting of this sort it is not necessary to go into details of the methods followed for corn improvement by those who are making a specialty of the work. It is sufficient to say that the old principle, "Like begets like," is the basis of the whole thing. The practical problem is to isolate the best ears of the type and quality desired and so arrange things that only those ears will have a chance to reproduce themselves for the succeeding crop. It is a process of selection and elimination with a definite object in view. The method adopted by the Canadian Seed Growers' Association, in brief, is as follows:

Twenty ears, the nearest possible to the ideal type, are selected and planted separately, an ear to a row of at least 50 hills, in a special plot next year. Each row of this special plot then represents the product of a single ear. A careful record of each row is kept, showing the number of barren plants, the number and weight of nubbins, soft ears, hard ears, etc. As the result of keeping the rows separate

in this way, we sometimes find a great variation in both the yield and quality of the different ears. When the plot reaches maturity the best ears are marked. From these, 20 are again selected for the next year's special plot, while the general product of the field is saved to plant the general farm crop. This process is repeated year after year and some results have been obtained which I think you will agree are highly creditable.

Table No. 1. Plot of Flint Corn—Longfellow—1910.

—	Hard ears, per acre.	Per cent. Hard ears.	Per cent. Soft ears.	Per cent. Nubbins.
Best row	162 bus.	93.3	....	6.7
Poorest row	98 "	70.4	5.6	24
Average	133 "	86.5	1	12.5

Increase in yield of hard corn of best row over poorest, 65%; over average, 21%

The above table summarizes the results from a plot of Longfellow corn, operated by Mr. L. D. Hankinson, of Grovesend, Ont., this season. You will see that the best row produced hard ears at the rate of 162 bushels per acre, while the poorest row gave 98 and the average is 133. The row giving the highest total yield also gave much the largest per cent. of hard ears. The increase in yield of the hard ears on the best row over the poorest was 65 per cent. and over the average of the plot, 21 per cent. Mr. Hankinson describes the steps in his work as follows:

1. Fixation of type, starting with some definite standard, and breeding and selecting to retain and improve that standard.

2. Selecting with a view toward early maturity and increase of yield in fodder and grain.

3. Care and selection of seed, selecting only well-matured cobs from strong-growing plants and adopting the best methods of storing and saving seed.

4. By using improved methods of cultivation. Special manuring, fitting and cultivation are given the plots.

Regarding the results obtained, Mr. Hankinson says: "With the variety of corn I am breeding—Longfellow, Flint type—by following the individual row method outlined by the association and the methods above, I have increased the yield of my general crop fully 20 per cent. in five years."

Table No. 2. Plot of Yellow Dent Corn, 1910.

Rows of 50 hills.	Weight of hard ears.	Weight of Nubbins.	No. Stalks barren.
Best yielder	136 lbs.	7 lbs.	0
Poorest yielder	72 "	25 "	1
Best quality	124 "	0 "	0
Most barren	117 "	0 "	11
Average	101 "	7 "	1.2

Increase in yield of hard corn of best row over poorest, 88%; over average, 35%

The above table summarizes the results with the plot of Yellow Dent corn operated by Mr. T. J. Shepley, Ouvry, Ont., this year. In this case the results are even more striking in some particulars. The best yielding row gave 136 pounds and the poorest only 72, the average being 101. This shows an increase in yield in hard corn of the best row over the poorest of 88 per cent. and over the average of 35 per cent. You will also notice the marked difference in number of nubbins and barren stalks in the different rows.

Another instance of what is being done with the Dent corn is given by Mr. J. A. Fletcher, of Valetta, Ont., who, in speaking of his work, says:

"With my Dent varieties of corn I am aiming at an earlier maturing corn, with from two to four feet off the length of the stalk. Our corn has been too high. I think that ten feet is high enough, with the ears borne not more than four feet and not less than three feet from the ground; this should give ideal results. I have succeeded in reducing the maturing period of one variety of corn nearly two weeks and have kept up the weight of shelled corn per acre. I think though that I have gone as far as I can and am satisfied with the results. Two weeks makes a difference between a matured crop and a failure, if frost happens to be early."

Another instance of what can be done in decreasing the number of barren plants by selection is given by Mr. J. O. Duke, of Ruthven, Ont., who says:

"By continued detasseling of barren plants I have been able to increase the yield and the number of barren stalks has been reduced from 38 per cent to about 12 per cent. One year it was only four per cent."

Work of a similar nature is being done with sweet corn. By selection Mr. Charles Pierce, of Wellington, Ont., has developed a strain of Stowell's Evergreen which is much earlier than the ordinary strain and of better quality. Mr. Pierce describes his methods as follows:

"My method of selecting seed in starting with Stowell's Evergreen some 20 years ago was topping the stalks just above the ear. This would let the sun have a better chance and would also throw more growth into the ear. By saving the earliest ears from year to year, it gradually changed from a late variety to an early one."

These few instances of what has been accomplished by practical farmers in the work of corn improvement will be sufficient to show the importance of the work and its possible effect upon the yield and quality of our corn crop. It is a conservative estimate that if the general corn crops of our province were seeded with seed improved by selection, there would be an increase in the value of the crop of at least 20 per cent.

TABLE No. 3. CORN YIELD OF ONTARIO, 1909.

—	Acres.	Bushels.	Per acre.	Market value.
For husking	322,789	22,619,690	70.1	$9,705,826
20% increase	.....	4,523,938	.....	1,941,165
For Silo	288,346	.....	.....	6,749,310
20% increase	.....	.....	.....	1,349,862

Table No. 3 shows that the market value of the corn for husking grown in Ontario last year was $9,705,826. An increase of 20 per cent would mean an increased value of nearly $2,000,000, and a similar increase in the corn grown for

ensilage would mean an increased value of about $1,500,000. This surely is something worth striving for and the farmers who are doing the work of selection are contributing an inestimable service to the advancement of agriculture.

Now a word to the purchaser of seed corn. All the corn growers in the province can not be specialists in seed production any more than all the stock raisers can be breeders of purebreds. Many of them are located in districts where the Dent varieties can not be grown for seed. How then can the best seed corn be secured? In this connection I can not too strongly urge the importance of purchasing seed on the ear instead of shelled. There are several reasons for this. In the first place, practically all of our best growers make a practice of shipping their seed corn this way, so if you get it on the ear it is an indication that it was grown by a man who knew his business. But more important than this is the fact that when you purchase on the ear you have a chance to see the type and quality of all the ears you are using for seed. On the other hand, if the corn is shelled the identity of the ears is lost and you may get a number of all sorts of types, with a sprinkling of deformed ears and nubbins. From such seed you may reasonably expect a crop lacking in uniformity and generally undesirable.

Another important point is to guard against getting seed of low vitality. Probably the most frequent cause of partial or total crop failure in corn is seed that will not grow. Corn is a crop that ripens late in the season and there is always danger of the vitality being impaired by early frosts or other conditions unfavorable to ripening. This is especially true of the Dents, and heavy losses are often sustained through failure to take proper precautions against using seed of low vitality. It is difficult to lay down hard and fast rules for judging the vitality of corn, but in general, indications of impaired vitality are: Kernels that are blistered and shrunken, especially the germs and backs; kernels with chaff or cob adhering to the tops; and kernels from which the tip cap has been removed, exposing the black covering of the germ.

These are the danger signs, and if there is any suspicion whatever a germination test should be made before planting the seed. This may be done in a box of earth or with moist cloth or blotting paper kept in a room at about living temperature, or samples may be sent to the seed laboratory at Ottawa, where the tests will be made free of charge.

Another thing to bear in mind is the advantage of procuring seed that is acclimatized. Experience has proven that the best results will be obtained from seed that is produced under climatic conditions as similar as possible to those under which the crop is to be grown. For this reason it is advisable to procure seed grown in Ontario rather than from the States. As a rule, the south-west portion of the province can be depended on to supply high-class seed of Dent corn, and generally seed grown in this district would be preferable to that produced outside of Canada.

SEEDING, CULTIVATION, HARVESTING AND PRESERVATION OF CORN.

JOHN FIXTER, FARM SUPERINTENDENT, MACDONALD COLLEGE, QUE.

I am pleased this afternoon to have the privilege of discussing this great question of corn. I propose to take it up more from the silage point of view. I listened to an address yesterday afternoon on corn and the gentleman said that the corn

belt was in Essex and Kent, but I have been wondering if the corn belt is not all over Ontario. I have grown corn in the Montreal district and have had as good results as corn growers in the County of Middlesex, so that they cannot speak about the corn belt unless they include the whole of Ontario.

Place in Rotation. Corn does best when sown on an overturned clover sod. If possible, select a field that has had but one season's hay crop taken off it. The corn will then have the benefit of the fertilizing elements of the clover roots, which in the average clover sod should be equal in nitrogen, phosphoric acid and potash contained in 12 to 15 tons of barnyard manure.

Soil. Corn is especially adapted to warm, deep loam soils, rich in humus, but it may be grown with more or less success on almost any kind of soil not too low in available plant food, and where the water line does not come too close to the surface.

Preparation of the Soil. If the land is clean allow the clover roots to make as much growth as possible in spring time. The extra growth in spring time when turned under, appears to heat and act as a hotbed to the growing corn.

If the land is full of weeds and seeds, immediately after removing the hay crop, plow very shallow. Roll, disc harrow and harrow sufficient to make a fine surface and keep down all growth. This can be accomplished by keeping the cultivator going at intervals on very warm sunny days. Later in the autumn the land should be thoroughly plowed and well set up to the winter's frost. Another and more profitable way of killing the weeds after the hay crop is removed is to plow the land. Roll with a heavy roller then disc harrow, and harrow thoroughly then sow the field with rape or white turnips in rows sufficiently wide enough to cultivate thoroughly and keep down all other growth between the plants by an occasional hoeing. By this method the land will be returning a handsome profit as well as cleaning the field for the corn crop. As soon as the turnips or rape is fed off, the land should be thoroughly plowed for the winter frost to do its part.

Manuring. For corn land green or fresh manure is advisable. If possible draw direct from the stable to the field as fast as it is made; do not allow the manure to heat or get mouldy. Should there be no snow or little snow, spread direct from the wagon or the manure spreader is preferable, as it will do the work much evener than can be done by hand. Should the snow be deep put the manure in small piles about eight yards apart and spread as soon as the snow is gone in spring time. The manure should be plowed under very shallow just before the planting season.

Time to Sow. As the corn plant is rather tender it is not wise to sow too early. There are seasons that are warm and dry, if the corn were sown early would give good results, but the safer plan for the majority of seasons is to hold back the planting until about the 24th of May and if the soil is then not warm and dry, sow the first week in June.

Planting or Sowing. Best results are obtained when planted in hills. The distance apart to be gauged by the amount of work to be put on the crop and the quality of the soil. The hills may be from thirty-six to forty-two inches apart each way, and from four to five grains to the hill, to be thinned later to 3 or 4 good strong plants to each hill. In the eastern part of the province the majority of farmers sow with the ordinary grain seed drill. The distance of the rows apart can be regulated by blocking the feed runs to suit. Care must be taken to have the rows at equal distance for convenience in cultivating. The rows may be sown from thirty-five to forty-two inches apart, according to the richness of the soil. The gauge on the seed drill to be regulated before entering the field in some con-

venient place where the corn can be seen. Do not fail to sow plenty of seed and to thin it out when the plants are about eight to twelve inches high, leaving a good, strong plant every eight to twelve inches apart in the row.

Varieties to Sow. Each farmer will have to be governed according to soil and climate. With corn as with other grains the farmer should experiment. In Western and Southern Ontario a later and a larger variety can be grown than can in the eastern and northern parts of the Province. It is useless to grow a variety for silage which will not come to the glazing state by the 20th to the 30th of September. The flint varieties are earlier than the dents. For Northern Ontario, where corn is grown for the grain crop and the stalks for feeding, I would suggest Quebec Yellow; when grown for ensilage, I would say Longfellow or Compton's Early. All are Flint sorts. In Eastern Ontario the above named varieties, with the exception of Compton's Early, will give excellent results when grown for grain. When corn is grown for ensilage, Leaming will come to the glazing state in most seasons. Later varieties, such as Mastoden and Red Cob, have been tried, but cannot be depended on for making the best quality of silage.

After Planting, Cultivation. This is one of the most important operations in growing corn. The land should be harrowed two or three times (after the corn is sown and before it comes through the ground) the last harrowing to be just as the corn is appearing. Should the corn be very thick when it comes up, it may be again harrowed with a tilting harrow when about four or six inches high. The two-horse cultivator should be started when the corn is quite small. Arrange the cultivator with narrow teeth and the shields to prevent the small plants from being covered. At first, loosen the soil deep and quite close to the plants, gradually working shallower and further away as the roots of the corn plant grow very rapidly. After the second cultivation the protecting wings may be removed and wider points put on the cultivator, throwing a little earth to the corn each time, thus encouraging new root growth. The cultivation to be continued with the team cultivator as long as possible then the single horse cultivator or harrow cultivator should be brought into use and kept going at intervals until the corn is well tasseled, then all cultivation may cease.

Time to cut for ensilage. Corn that is intended for ensilage should be well advanced towards maturity before it is cut. Experience has shown that the best and sweetest ensilage is made when the corn has just passed the late dough, or in the glazing stage. If put into the silo at an earlier period the corn is less nutritious than it would otherwise be and it is more likely to make silage unduly acid.

Harvesting. The best implement is the corn harvester. With this implement a man and three horse team can cut and bind four to six acres per day. The bound corn can be loaded, unloaded and run through the cut box with half the expense, as compared with loose corn.

Drawing to Silo. I would advise a low-wheeled wagon or a low platform attached to the axle of the ordinary wagon for with this arrangement the driver can load his own load if necessary. The ordinary three-tined hay fork will be found most useful for picking up the sheaves of the heaviest corn and placing them on the wagon.

Ensilage Cutters. There are several styles. Any of the blowers will work more satisfactory than the carrier machines. Length to cut, about half an inch gives best results.

Distribution in the Silo. A chute should be arranged to receive the silage as it comes into the top of the silo. Have large bags with the bottom cut out attached to the chute in such a way that as the silo fills up one bag may be taken off at a

time. With the bags extending from the chute to the bottom of the silo one man will quite easily take the place of two and the corn will be much evener distributed and better tramped as the operator holds the bags directly in front of him.

Covering the Ensilage. As soon as the silo is filled or say all that is to be put in at that time, the surface should be perfectly level and thoroughly tramped. Then cover with a few inches of straw, again tramp and cover with a good, thick heavy layer of sand. The sand being slightly dampened will greatly assist in excluding the air and packing the top layers of ensilage. This plan has been found the best and cheapest way of preserving ensilage on the top of the silo of many ways tried.

The following figures give the cost of producing corn ensilage on the Macdonald College Farm. Thirty-four acres yielded 640 tons:

Rent of Land at $4 per acre	$136 00
Manure. 18 tons per acre, ⅓ charged to each crop at $6 per acre	204 00
Plowing 23 days at $3 per day	69 00
Disc harrowing and harrowing 8 days	24 00
Seed, 17 bushels at $1.50 per bushel	25 50
Sowing and Planting	18 00
Cultivating 6 times	66 00
Hoeing and thinning, 43 days at $1.50	64 00
Cutting with Binder, 10 days at $3.00	30 00
Twine, 204 lbs at 11 cents	22 44
Teams drawing to Silo, 34 days at $3	102 00
Men loading, unloading and tramping in silo, 115 days at $1.50	172 50
Use of engine and cut box, 10 days at $7	70 00
Use of general farm machinery at 30 cents per acre	10 20
Total crop 640 tons—total cost	$1,013 64

Cost per ton, $1.58.
Yield per acre, 18 tons 1,657 lbs.

The greatest success in corn-growing will come to the man who plants the proper variety on a manured, well-tilled clover sod, and gives each plant sufficient space to grow in; hoes his corn, as well as cultivates, to keep down all weed growth; maintains a fine dust blanket for the conservation of soil moisture, and who continues cultivation for upwards of a month after the corn is too tall to cultivate to advantage with the two-horse cultivator.

Q.—Is it necessary to plow the land late in the fall?

A.—Not for corn if the field is clean. Always plow in the fall for grain or for roots.

If the field has been cultivated during the summer plow it as well in the autumn. I am a great believer in fall plowing and deep cultivation. Bear in mind, I do not want you to turn up the poor soil. If the humus in the soil is only two inches deep, plow that depth, but whatever depth you plow set it up well so that the winter frosts will pulverise the soil. If you have a cultivator that will go down ten or twelve inches before the last plowing in the autumn all the better. If not, get a sub-soil plow attachment. They can be arranged on the ordinary plow. Put on three horses and loosen up the soil to the depth of ten or twelve inches. Spring plowing should be shallow in order to get the best results; if you plow deep you cut off the water channels from the surface as you are not able to get the lower part of the furrow packed to the under soil and your land will dry out quicker. You cannot conserve the moisture if you plow too deep in the spring time. The shallower the better; but I am a firm believer in deep cultivating plowing in the fall. I find that if you do not plow the land in the spring for roots or corn the small weeds will get started, but if turned under just before planting, the corn will get ahead of the weeds.

Q.—Would you sow any seeds on your meadow sod after turning it in the fall?

A.—No.

Q.—You referred to rape and white turnips after a hay crop.

A.—That is only instead of a summer fallow. They must be sown about the first week in July. Get your hay off early in July and sow immediately. I have harvested over 20 tons to the acre after harvesting a good crop of hay the same season.

Q.—On the land from which you took the hay?

A.—Yes, I got two crops in one year.

Q.—Would you plow for corn in the spring or fall?

A.—If the land is perfectly clean I would allow the clover sod to grow up until just about corn planting time. If it is not clean I would cultivate after the previous hay crop is removed. Plow in autumn, again in spring time.

Q.—When do you advise applying the manure?

A.—I like to put it out as it is made during the winter. Turn it under in the spring. Green manure is preferable to rotted manure.

Q.—We find when we put out manure without heating it we get a lot of weeds.

A.—By a systematic rotation of crops I do not think the weeds will bother you.

Q.—Suppose a man had a dirty farm, would you still advise him to grow clover?

A.—Certainly. Sow corn to clean the land, it is a paying crop, and then sow clover to smother any weeds that may be left. We have grown 114 bushels of corn to the acre at the College.

Q.—Sow clover with every grain crop?

A.—Every crop of grain you grow except peas.

Q.—A man having a dirty farm would be anxious to get on his land as soon as he cuts his grain crop. What value would the clover be to him in that short a time?

A.—If you can get a good catch of clover up to about August, it would be equal to three or four tons of barnyard manure to the acre. After harvest, cultivation is one of the best plans to keep the soil free from weeds.

Q.—If you would use a two-prong fork I think you would find it better than a three-prong fork for loading the corn.

A.—We do not have two-prong forks on hand. I think your idea is a good one. If you can get a fork with the tines and handle straight I think it would be better still.

Q.—Do you ever pick up any small stones with the fork? In our section they will not allow a man to use a three-tine fork on that account.

A.—We have never had any trouble with the stones.

Q.—Don't you think the corn is better when it is cut by a machine that has a blower?

A.—A blower is the best machine. When you cut with the blower the corn is all shelled and evenly distributed. When you cut with a carrier machine the corn is all left on the cob and the cows root through the ensilage to get the corn.

Q.—Have you found any difficulty by finding strings amongst the ensilage?

A.—Many a time I have put one extra man at the cutting box to cut the bands and at the same time to save them for bag strings or other uses, but with the rush at the corn harvest time we sometimes are not able to do that and I have not seen any bad results.

Q.—Don't you think a silo could be built so you could put a horse in to tramp the ensilage?

A.—I do not think it would be wise. You would have to make the doors too large, and if there is any spoiled ensilage in the silo it is generally at the doors. I would have as few doors as possible.

Q.—Do you not think it is advisable on a 30-foot silo to have the door at 25 feet?

A.—The trouble in changing the pipe for filling would take more time than it would be worth. We have a 20 horse power engine and find no trouble in hoisting the corn the extra five or ten feet.

Q.—What length do you advise cutting the corn?

A.—Cut it in half-inch lengths if possible.

Q.—What kind of wood would you use to build the silo?

A.—Any kind of soft wood.

Q.—What about the stone silo?

A.—I would not care about stone. I think it would be too expensive.

Q.—Are they not making steel silos?

A.—I think they are. I have never tried them.

Q.—What would you substitute for corn for ensilage where it could not be grown.

A.—Alfalfa. However, I think corn can be grown for silos or grain in almost any part of Canada. Select a variety that is climatized to the part of the country you are to grow it.

A MEMBER: Parry Sound.

A.—I would advise you to try Longfellow, and if you cannot get it to succeed try Quebec Yellow. Quebec Yellow ripens a month before Leaming is fit to cut for ensilage. I have not very much use for White Cap, because the stalks do not grow strong enough to hold it up and it lodges too easy. Red Cob should never be sown in this part of the country. It is not a fit corn to be grown for fodder or feed, or ensilage.

Q.—What about Mastoden?

A.—I have gone back on that, or it has gone back on me. I cannot get it to come to the proper stage of maturity for ensilage. I like the Leaming better than either White Cap or Mastoden.

Q.—Can you get the Leaming to mature?

A.—Every year I have grown corn on the Island of Montreal the Leaming matures sufficient to make choice ensilage. If you select the Early Leaming it will mature ten days earlier than the Late Leaming.

CORN AS A FOOD FOR STOCK.

G. E. DAY, PROFESSOR OF AGRICULTURE, O.A. COLLEGE, GUELPH.

There are two well-known types of fodder corn, viz., Dent and Flint. The grain of corn may be either white or yellow in color, but investigation shows that there is no relation between the color and the feeding value of corn. The grain of Flint corn contains a little more protein, as a rule, than that of Dent corn, but it is a little lower in carbohydrates or starchy matter. The difference between feeding values of Flint and Dent corn is not material.

Corn grain contains a high per cent. of starch and a rather low per cent. of protein and ash. It also contains a high per cent. of oil or fat. Since carbohydrates and fat are mainly useful for forming fat in the animal body and supplying the animal with energy, it follows that corn has a very high fattening value. Protein is useful in the animal body for the formation of muscle, and the ash of the food goes to build up the bone of the animal. From its composition, therefore, it will be noted that corn is not a good bone and muscle former but is a most excellent fattening food. Practical experience also proves this to be the case, and corn must be understood in order to be fed to the best advantage.

For fattening comparatively matured animals, no cereal grain equals corn; but in the case of very young animals which are rapidly building up the muscles and bones of their bodies corn should always be fed with some other food which will make up for the deficiency of corn as a bone and muscle former.

There are several important by-products from the corn grain. One of the most common of these is what is known as Gluten Feed, which is composed of the gluten of the corn and the bran or outside skin of the grain ground together. This by-product occurs in the manufacture of starch from corn. Another by-product of the starch factory is Gluten Meal, which consists of the gluten of the corn but does not contain any of the bran. Another by-product is Hominy Feed, which is a by-product in the manufacture of hominy, and consists of the bran or hull of the corn together with some of the starchy matter.

Unfortunately, the terms Gluten Meal and Gluten Feed are often confused. The names are very much alike, and yet there is quite a wide difference in the composition of the two products. Gluten Meal is very much richer in protein and fat than Gluten Feed, whereas Gluten Feed is considerably higher in carbohydrates than Gluten Meal. Gluten Feed, however, has a high percentage of protein, and is an exceedingly valuable food for dairy cows when it is desired to increase the proportion of protein in the ration. Gluten Meal would, of course, be more effective than Gluten Feed, but it is an exceedingly heavy meal and a little more care would be necessary in its use. Hominy Feed is low in protein, but fairly high in carbohydrates and very high in fat. It is a palatable food and has a very considerable value for either dairy or beef cattle, but would be more valuable for fattening than for milk production.

The following table shows the dry matter and the digestible nutrients in 100 pounds of the corn grain and its leading by-products:—

—	Dry Matter in 100 pounds.	Digestible nutrients in 100 pounds.		
		Crude Protein.	Carbo-hydrates.	Fat.
	Lbs.	Lbs.	Lbs.	Lbs.
Dent Corn	89.4	7.8	66.8	4.3
Flint Corn	88.7	8.0	66.2	4.3
Gluten Meal	90.5	29.7	42.5	6.1
Gluten Feed	90.8	21.3	52.8	2.9
Hominy Feed	90.4	6.8	60.5	7.4

As to the corn plant as a whole, we find that it produces a large amount of bulky fodder per acre. Of the dried product of the corn plant we have Corn Fodder and Stover. By Corn Fodder is meant the whole corn plant, including the ears;

whereas Stover refers to the corn plant with the ears removed. The following table shows the dry matter and digestible nutrients in 100 pounds of fodder corn, corn stover, together with timothy hay and oat straw for purposes of comparison:

—	Dry matter in 100 pounds.	Digestible nutrients in 100 pounds.		
		Crude Protein.	Carbo-hydrates.	Fat.
	Lbs.	Lbs.	Lbs.	Lbs.
Fodder Corn	57.8	2.5	34.6	1.2
Corn Stover	59.5	1.4	31.2	0.7
Timothy Hay	86.8	2.8	42.4	1.3
Oat Straw	90.8	1.3	39.5	0.8

It will be noted that there is more or less similarity between the composition of fodder corn and timothy hay, the timothy, however, possessing some advantage. There is also a similarity between corn stover and oat straw, with the advantage in favor of oat straw. When we consider, however, the immensely greater yield per acre of fodder corn than of timothy hay, we can realize something of the possibilities of this crop as a means of supplying a cheap, bulky fodder for stock.

The value of corn as a silage crop has been known for a long time in this Province, and the number of silos throughout the Province is increasing every year. It is an interesting fact that the largest milk condensing plant in the United States prohibits the feeding of silage; on the other hand, there are many other condensing factories which favor its use and which are encouraging farmers to erect silos. Everything considered, therefore, we may safely say that silage has no injurious effect upon milk. Corn silage is especially valuable for dairy cattle, but it can also be used to good advantage in the case of fattening cattle, and a moderate amount may be fed even to horses or sheep, though many good sheep men do not favor its use. As in the case of corn grain, silage must be understood in order to be used to advantage. It is a bulky, succulent food which gives us a cheap and palatable bulky fodder; but it is poor in protein, and this defect must be supplied by the judicious use of other foods in order to get the best results. Its succulent nature is beneficial to animals which are receiving a large amount of dry food, and it is especially valuable when roots are not used in the ration.

Many discussions have arisen regarding the relative value of silage and dry corn fodder, some maintaining that the losses incurred in the making of silage more than off-set the advantages which the succulent silage possesses over dry fodder. Extensive investigations at different experiment stations go to show that the losses incurred in the field-curing of fodder corn and in the process of fermentation which corn undergoes in the silo, are not materially different. In some cases larger losses have been found in the field-cured fodder than in the silo. As to feeding results, it has been found that there is not a very large difference between the milk produced from an acre of corn fed in the form of dry corn fodder and an acre of corn fed in the form of silage. At the Vermont Experiment Station, silage produced 11 per cent. more milk than the dry corn fodder from an equal area. At the Wisconsin Experiment Station silage produced 5 per cent. more milk and nearly 7 per cent. more fat than the dry fodder from an equal area. Apparently, the acceptability of a succulent ration such as silage has an influence upon the milk yield of the cow.

Silage is also attracting attention as a food for tiding cattle over periods of short pasture during the summer, and a summer silo is a very valuable asset to the dairy farmer.

In another place, reference has been made to the immense yield of fodder per acre from the corn plant. This may be illustrated in another way. It does not take a particularly heavy crop of corn to produce twelve tons of silage per acre. Twelve tons of corn silage contain, approximately, 336 pounds of digestible protein, which is equal to the digestible protein contained in 90 bushels of oats, 83 bushels of barley, or 560 bushels of turnips. Twelve tons of corn silage also contain 3,408 pounds of digestible carbohydrates, which is equal to the digestible carbohydrates contained in 199 bushels of oats, 109 bushels of barley, or 7,012 bushels of turnips. It will be noticed from these comparisons that the great value of the corn plant lies in supplying a large amount of carbohydrates, and, as before stated, the man who understands the peculiarities of the corn plant will be in the best position to use it to advantage.

The following table shows the dry matter and digestible nutrients in 100 pounds of corn silage, turnips, and mangels:

	Dry matter in 100 pounds.	Digestible nutrients in 100 pounds.		
		Crude Protein.	Carbo-hydrates.	Fat.
	Lbs.	Lbs.	Lbs.	Lbs.
Corn Silage	26.4	1.4	14.2	.7
Swede Turnips	11.4	1	8.1	.2
Mangels	9.1	1	5.5	.2

It will be noted that the silage contains considerably more dry matter than roots, and experimental work, so far as it goes, indicates that the dry matter of silage is practically equal to the dry matter of roots in the case, especially of matured animals.

There is probably no crop which supplies more feed per acre than the corn crop, though it is a somewhat one-sided food and must be combined with foods which will make up its deficiencies.

Q.—Is a ton of silage worth as much as a ton of roots?

Prof. Day: On general principles, yes, it is worth a good deal more. For special cases it is not worth as much, possibly. If I wanted something to tempt the appetite of a calf or coax these young lambs to eat, or wanted something that would be particularly wholesome for ewes or for certain animals I would hate to be without roots; they are safe, easily digested, and particularly palatable and refreshing. When it comes to a question of feeding dairy cows, matured animals, or possibly even in a case of fattening steers so far as experimental work goes, the relative values for those particular purposes is indicated very much by the amount of dry matter which the two foods contain. In other words, a ton of corn ensilage will show very much better results than a ton of roots. Corn is a very fibrous product. The animal is already eating hay or straw or whatever it may be, which is also high in fibre, consequently, by adding silage to the rations, while increasing the succulence of that ration at the same time we are not decreasing the proportion of crude fibre. If we feed roots we are decreasing the proportion of crude fibre.

I remember one particular experiment where steers were fed on silage, some fed almost entirely on silage, and the steers that came through did particularly well, but one steer died from impaction. That is the point, there is that mechanical difficulty. Silage is a food which is like the corn grain, it has got to be understood to be fed to advantage. Silage will not take the place of everything else; it is not something that is going to change our foods altogether; we still have to have a number of these old standbys, but it is a cheap as well as a palatable produce. For young animals, for pigs, for horses and sheep I would prefer roots, but there is a whole lot of stock around the farm that can consume silage to advantage.

Q.—Do you give your horses any at all?

A.—We don't now, but we did occasionally. We feed now with roots. Take a good quality of silage I think it would be beneficial, but not this sour silage. We feed turnips, mangels, carrots, sugar beets or anything we can get hold of in season.

Another question that has arisen in various parts is the relative merits of feeding corn in the form of silage and in the form of dry corn fodder. Those who oppose the silo said when corn was put in the silo there was a large waste through fermentation, whereas that which was dried in the shock didn't have that loss. The losses from corn in the field and in that which is cured in a good silo are not materially different.

I firmly believe that in feeding any animal one of the very first things we must study is to make the food acceptable to the animal. If you give a cow food she really likes she will respond better, even supposing it may be a little defective in composition, than if you give her a ration that she is inclined to take under protest. I think palatability of food has a wonderful influence in the feeding of stock, and the stock man who recognizes that fact is a successful feeder of animals. The corn crop is a crop that must be understood if a man is going to use it to advantage. If you understand that corn as a food has its strong and weak points, and understand the fact that it is low in protein and rich in carbohydrates, there is no reason why a man should not use it to good advantage in a wide range of feeding.

A. C. Hallman, Breslau: After what has been said, I don't know that there is anything left for me to say. I might mention, however, that I do not think there is any winter fodder crop that we could grow in Canada or America that is of as much value in connection with farming, with the present system of farming, as the corn crop. I don't want to be understood as saying that it is more valuable than any other crops, but with our system of farming we have got to have a variety of food, of which some is succulent food. There are a good many climatic changes in this country. We have the root crop and turnips, which are both valuable, and no feeder here to-day but what admits they are most valuable in our feeding rations. I would not for a moment over-estimate corn over roots of any kind, but I don't consider that any farmer who is living up to his best privileges can afford to be without corn and a silo. We find, according to what Mr. Fixter and Professor Day has said along the line of feeding, that we can grow more food per acre taking it for ten years with corn than any other crop, because we can defy almost any season. All we want to know and understand is the handling of the crop.

I want to make another statement. I don't think that there is any excuse in most cases in having what you call poor ensilage. If the farmer understands the crop and the cultivation of the soil, seventy-five per cent. of the corn he grows ought to be good for silage purposes. If we have the right kind of corn that matures, and if we put it into a well-constructed silo there is no reason why there should be any waste whatever. If we have a good quality of corn and a good silo we can expect a good quality of ensilage.

Q.—What kind of corn do you think best?

A.—The kind of corn that does best in your immediate locality; we have got to have the ear as well as the stalk, and among the different varieties I think the White Cap ranks very high.

Q.—Would you put the corn immediately in the silo?

A.—That depends entirely on the condition. If it is well-matured put it in the silo immediately; if it is too succulent it is better to let it wilt or leave it in the field till it is matured.

Q.—What kind of silo is the best?

A.—That is a pretty hard question to answer. In my own opinion I think there is no silo to equal the cement silo; it combines everything required in a silo; it is storm proof, fire proof, germ proof and rot proof. There should be no waste in a well-constructed silo.

Q.—Would you have any drainage in the bottom of your cement silo?

A.—I say not necessarily so if your corn is matured.

Q.—Will a drain in the bottom injure your silo?

A.—There is no reason why it should, but there should not be any surplus moisture. I think it would be better to have any surplus moisture out because it will turn into an acid and spoil the flavor of your ensilage. I put my corn in the silo immediately is is matured; if not I allow it to remain in the field for a couple of days. If the weather is dry and fine it is all right, but if you should happen to get rain it will make it very bad to handle.

Q.—Do you think the cement block silo has any advantage over any other cement?

A.—I can't see why it would have, though it is claimed it has. I used a wooden silo for about fifteen years, and I have used a cement silo for eight years and I prefer the cement silo.

Q.—What about a hollow-walled silo?

A.—The only advantage will be in not freezing, but there should be no loss with a solid silo. You want to keep the sides lower than the centre, if you don't the frost will come through and there is a thin layer of corn and it will freeze just a little every day.

Q.—Does it hurt ensilage to freeze?

A.—No; it will mix up with the other ensilage and you will not notice it. If the corn is cut before it is matured it will not keep as well.

Q.—Did you ever try sunflowers in the ensilage?

A.—Yes; I have tried sunflowers, but after once trying them I have never tried them again. The only thing I would do would be to mix the sunflowers with corn.

Q.—Do you ever put water on your corn when you put it in the silo?

A.—No, it is not usually necessary. In very exceptional cases it might be done.

Q.—Two years ago I built a silo and I didn't get it built till the 29th of November, and I turned a quarter-inch stream of water into the blow-pipe and fed it into the silo and I found that I had fairly good ensilage, better than I have this year, built in October, without the water?

Q.—What is wrong with your ensilage this year?

A.—It is too dry.

Q.—Is it mouldy?

A.—It is.

Q.—How did you fill it? With an ordinary blower?

A.—Yes, and I kept two men in the silo all the time mixing it, but we didn't have the attachment Mr. Fixter spoke of.

A.—I think that if you had had that attachment it would have been all right.

CONSTRUCTION OF SILOS.

JOHN FIXTER, FARM SUPERINTENDENT, MACDONALD COLLEGE, QUE.

The subject of silo construction is a very important one. We might discuss the difference between the concrete and wooden silos. Having had experience with both, I may be able to give you some information. As to whether I would advise the concrete or wooden silo, so far as the two materials are concerned, I would say build one of whichever material you have got most conveniently at hand. Either silos will keep ensilage perfectly. The concrete silo, the first year, if it is not well seasoned will spoil some of the ensilage around the outside. I don't know that one season will rectify that; the concrete must be perfectly seasoned. Whatever material you build it with, build a round silo every time. The square silo and the octagon silo is a thing of the past compared with the ensilage-keeping qualities of the round silo.

There is one point which a gentleman made that I don't quite agree with. He said put a concrete bottom in the silo. I would never build a silo with a concrete bottom in it; a clay bottom is cheaper and can be drained easier. There are times that we cannot possibly have corn in such condition that no liquid comes from it, that is, the moisture will drain from the top to the bottom, and the liquid will fill the silo up to the first door and run out, and the result is sour ensilage.

If you have plenty of good wood material on your farm build a wooden silo. Use any of the soft woods. It is not necessary to have staves the full length; you can have them in different lengths. Have the joint covered with the iron bands. Sometimes wooden silos are built with posts to carry the roof, and to take the place of the clamps for the rods to pass through. Have the doors facing the barn, and keep the silo a little back from the barn. I think there is more cause of complaint from the odor of the ensilage getting into the milk when the cows are being milked than from any other way. In constructing a new silo put it back from the barn ten or twelve feet so as to have a good feed room between, where the doors can be closed to keep the odor away from the stable when the cattle are being milked.

Q.—What size of silo would you recommend for an average farm?

A.—For 100 acres, about fifteen feet across and thirty-five or forty feet high; that will hold somewhere about 150 or 175 tons.

Q.—Wouldn't it be better to have two smaller silos than one as large as that?

A.—Not for the average 100 acre farm. When you have the smaller silo the ensilage does not pack as well.

Q.—Is it wise to go below the stable with the bottom of the silo floor?

A.—I would advise going down three or four feet below the stable floor if you can get good drainage from the bottom of the silo.

THE FAT-CASEIN METHOD OF DIVIDING MONEY AMONG PATRONS OF CO-OPERATIVE CHEESERIES IN CANADA.

H. H. Dean, Professor of Dairy Husbandry, O.A. College, Guelph.

In order to intelligently understand the question before us, it is necessary to know something of the nature and chemical composition of milk. This is the foundation of the whole question.

Aristotle, the Greek philosopher, born nearly 400 years before the Christian era began, defined milk as elaborated blood, and we have not been able to improve very much on his definition, especially as to origin, during all the years since. The ancients were acquainted with but three constituents of milk—butter, which they used for anointing their infants, believing it to contain some virtuous property; curd, which they precipitated with vinegar; and the remaining part, or by-product, which we call whey. In 1619 a fourth constituent, milk-sugar, was discovered by a scientist named Bartoletus. Early in the eighteenth century Leenwenhoek discovered the fat globules in milk by means of the microscope. Practically all that we know about the chemistry of milk was the result of scientific research during the nineteenth century. We thus see that the scientific phases of the milk question are of comparatively recent origin.

In addition to a knowledge of dairy chemistry, it is necessary to have a working understanding of cheesemaking, and the difference between butter and cheese, so far as the milk constituents required to make these are concerned.

Composition of Milk.

Milk is composed of water and solid material—the latter being partly in solution and partly in suspension in the liquid portion. The solids consist of solids, not fat and a solid, called fat. The solids, not fat, are made up of casein, albumen, sugar, and ash or mineral matter. Stated in the form of percentage we have about:

84 to 88	per cent.	water,	averaging	87.5
16 to 12	"	solids,	"	12.5
3 to 4.5	"	fat,	"	3.6
2 to 3	"	casein,	"	2.5
		albumen,	"	.7
4 to 5.5	"	sugar,	"	5.0
		ash,	"	.7

Buttermaking and Cheesemaking Contrasted.

In the process of buttermaking we remove from the milk but one constituent, viz., the fat. The relative values of milks for buttermaking is determined by the milk-fat contained, assuming that all are equally good in bacterial content, cleanliness, and other physical characteristics. This is the main point to bear in mind with reference to a satisfactory method of paying for milk used in the manufacture of butter. It is not necessary to consider any other part of the milk than the fat, when deciding upon its value.

For cheesemaking, however, we require two milk constituents, fat and casein—either of these being lacking it is impossible to make cheese as ordinarily understood. This being so, any system of paying for cheese milk which is equitable and just, must take into account both fat and casein—nothing less will, or can satisfy the demands of justice and fair dealing.

Systems Now in Use in Canadian Cheeseries.

Three plans or systems are now in use among Canadian cheese factory patrons. The oldest, and the one most commonly adopted is that of dividing moneys received from the sale of cheese, according to the weight of milk delivered, not taking into account any differences in the composition of milk or its relative cheese-producing capacity. The injustice of this plan is readily seen in the following table of results based upon five years experiments, with milk ranging in fat content from 2.7 to 5.5 per cent. In this work nearly 200,000 lbs. milk were used and 250 experiments were made:

Per cent. fat in Milk.	Lbs. Cheese produced per 100 lbs. milk.	Lbs. Cheese per lb. fat in milk.
3.0	8.89	2.92
3.5	9.54	2.70
4.0	10.36	2.57
4.5	11.08	2.47
5.0	11.77	2.36

The range in milk-fat percentages at factories will probably be from 3 to 4.5 per cent. This difference in fat content makes a difference of about two pounds more of cheese per 100 lbs. milk in favor of the milk testing 4.5 per cent. fat. We thus see the absurdity and injustice of basing cheese values upon weight of milk only.

The second system in use among, perhaps less than 25 per cent. of the cheese factories of Canada, is that known as the "test" plan, or of basing values upon one milk constituent, viz., the fat. This system was advocated about the time the Babcock test for fat was brought to the attention of dairymen in 1890. This test was hailed with delight by Canadian factorymen, and it has undoubtedly been of great assistance in developing the dairy industry of Canada. As usual, with a new thing, some most extravagant claims were made for this test, among them that it determined *the value of milk* for *all purposes*. Some of the leading men connected with the science and practice of dairying in both Canada and the United States were carried away by this new-found dairy helper, and the country was flooded with "fat" literature on dairying, while dairy orators vied with one another in praise of this inventor and in making absurd claims for its effect upon the morals and practices of dairymen. Far be it from us to withhold credit where credit is due, and the inventor of the Babcock Test, Dr. S. M. Babcock, of Madison, Wisconsin, U.S.A., deserves the thanks of the Canadian dairymen for giving to them free the results of his scientific discovery; at the same time, we are not bound to accept as truth all that any man may say, be he ever so great and learned.

Referring again to our table, we see that as the percentage of fat in the milk increased, the yield of cheese per pound of fat in the milk decreased. On this point science and practice agreed. Science says that as cheese is made from two milk constituents, fat and casein, one of these alone cannot be used as a basis for determining cheese production from milk with varying percentages of one or both of these constituents. In practice, we found this to be the case, hence we could not

accept the "fat" theory and practice as a basis of settlement among patrons of cheeseries. We have maintained our position on this question during the past eighteen years.

The third system takes into account both fat and casein, but as there was no short method of determining casein previous to 1907, we suggested the factor 2, as an addend to the fat percentage to determine the relative values of milks for cheesemaking. This system, in varying forms, has been followed by a few factories in different parts of Canada, and where the work has been done conscientiously it has, generally speaking, given satisfaction.

However, we now have a practicable short method of determining casein in milk, hence we advise the use of both the Babcock test for fat and the Hart test for casein in cheeseries. The casein test was perfected by Dr. E. B. Hart of the Wisconsin Experiment Station, and great credit is due to him and also the Wisconsin Station, for this second important test for dairymen from the same station. We look next for a single test which will combine in one the features of the Babcock and the Hart casein tests, so that both milk-fat and casein may be determined at the same time and at one operation. The man who does this will deserve the thanks of dairymen in all parts of the world.

How Shall the Testing be Done?

We come now to the practical application of the foregoing principles to our Co-operative system of cheesemaking as found in the Province of Ontario. We beg leave to suggest:

1. That fat and casein shall have equal value, pound for pound, in determining the relative values of milks for the manufacture of cheese.

2. That in large factories where the business will warrant the employment of one man to do the testing, keep books, and generally supervise the business, that the testing shall be done at such individual factories.

3. That in the smaller and majority of factories a system of co-operative testing shall be adopted by employing a skilful, disinterested person to do the work, either under the supervision of the factories interested, or by the Government, such person to be paid out of a general fund raised by said factories as a tax on the cheese manufactured; or by the Provincial Government, similar to the present system of employing and paying travelling instructors.

4. That a campaign of education on the importance of testing milk and paying for it upon a cheese-producing basis, be instituted during the coming winter among all our cheese factory sections in order to arouse interest in the question.

Samples, no matter where they are being tested, should be set in hot water at a temperature of 100 degrees and made directly out of the hot water and not out of the machine.

If we restrict the term "butter fat" to the fat that has been turned into butter we know exactly what we are talking about. A misuse of terms is often confusing. This (sample) I would call milk fat, this (sample) the casein of the milk.

Q.—Do we find casein in proportion to the fat?

A.—The casein increases usually when the fat increases, but not in the same proportion. Milk testing high in fat usually tests comparatively high in casein, but not in the same proportion as fat.

Q.—How hot would you have it for testing?

A.—140 degrees. Always adopt a uniform temperature. There is no special harm if you have it 150 or 160.

Q.—How often would you have to test?

A.—There is a practical difficulty. So far as we have been able to determine the effect from observations in making composite samples we find we cannot get good results by carrying composite samples more than a week, therefore I think it will be necessary in the factories to test your composite sample at the end of the week for casein and run your fat for another week and test; then make a new sample and test the casein at the end of the third week and test again for fat. By making two composite casein tests per month you will be near enough for all practical purposes, although before saying anything very definite on that question I would like to do some more work. Bear this in mind, that casein is a great carrier of milk; it carries the moisture of the cheese; it is that part of the milk which is acted upon by the rennet. This is a comparatively new question; we have only been working on it for two years and we will need to do a lot of work before we can come before an audience like this and say thus and thus is so. We are satisfied the principles are correct, but there may have been some variations in the details, and will stand the test of time in every country where they manufacture cheese.

We have been carrying on for two years now an experiment to determine the fat and casein in the milk of three different kinds of cattle—Holsteins, Ayrshires and Jerseys. The details of that you will find in the annual report of the College. We have been getting some results rather contrary to common opinion, with nine different cows representing three different breeds. Now, we are now starting on the third year of that work, and I would rather not say very much about it until we have continued the work for a longer time.

PAYMENT OF MILK BY THE TEST.

FRANK HERNS, CHIEF DAIRY INSTRUCTOR, LONDON.

The question is sometimes asked, and occasionally the Press is good enough to mention the matter, "Are the Dairy Instructors doing all in their power to encourage paying for milk by test?" The Instructors, like many other people, recognize that the milk belongs to the patrons and that they have a right to say how it shall be paid for. We have discussed this question at our District Meetings, at the Annual Factory Meetings, and in many other ways tried to arouse interest, and I believe it can be said we have endeavored to bring about a better understanding of this problem.

LESS THAN 10 PER CENT. OF THE FACTORIES IN ONTARIO PAY BY THE TEST. Why is it that after twenty years study and discussion of this question that only about 112 factories out of 1,200, less than 10 per cent., in the Province of Ontario pay for milk according to quality. A campaign of education is certainly necessary, and it will need to be strenuous to cope with this condition.

UNIFORM SYSTEM OF PAYMENT. All dairy experts agree that milk for cheese-making should not be paid for by the pooling system, but that quality (represented by fat or fat plus casein) should be recognized. We trust that in the near future authorities on this question will get together and arrive at some decision whereby a uniform system will be advocated. However, this is probably not so important as the adoption of some method of payment according to quality.

SANITARY CONDITIONS OF MILK IMPORTANT FACTOR IN QUALITY. Although it is true that cheese made from normal milk ranging in fat content from 3.4 per cent. to 4 per cent. may by judges be scored higher in favor of the cheese made

from the richer milk, and although the cheese made from the richer milk may be of superior quality, yet when these cheeses are offered for sale in the open market we find that, provided the condition of the cheese, such as flavor, body, texture, color, closeness, and appearance, is right, the buyer apparently does not make enough distinction in the price, so that evidently a great difference in the value of normal milk for cheese-making arises through the increase in yield of the richer milk over the poorer milk.

The sanitary condition of the milk is a very important factor in controlling the quality of cheese; in fact, perhaps, as much so as the per cent. of fat, provided the milk is normal. It may be possible to make cheese from 3.4 per cent. milk which will have a greater market value than cheese made from 4 per cent. milk, if the sanitary condition of the 4 per cent. milk is sufficiently inferior to that of the 3.4 per cent. milk, while the reverse will be the case, and perhaps more so, if the 3.4 per cent. milk is in bad condition, but there is no question that the quantity of cheese made from the richer milk is always greater, and when the poor and rich milk are equal with respect to sanitary conditions then not only the quantity but the quality (including higher fat content) of the cheese from the rich milk is superior, so that, in any case, the extra yield from the richer milk should be recognized in payment.

Patrons Objections Important. Many objections raised against payment by test may appear trivial to those who know, but assume importance at the Annual Meetings of patrons, judging from a fairly long experience attending these meetings and discussing this question.

Accuracy in Test. A few have questioned the accuracy of the test itself, suggesting that it is difficult to make two tests of the same milk with like results. It can readily be demonstrated that, given glassware properly calibrated, any number of tests of the same milk may be made, the readings of which will be the same, allowing for a possible mechanical error of .1 of 1 per cent. The Federal Government has lately passed an Act that provides for all glassware used for the Babcock test to be accurately graduated, which eliminates error from this source. The Babcock test is simple, easily understood, has the approval of the scientific dairy world, has been in use for over twenty years, and there can be no question regarding the accuracy when properly operated.

Loss of Fat in Whey from Rich and Poor Milk. Many patrons still seem to think that when rich milk is delivered a greater proportion of the fat is lost in the whey than from the poorer milk. "The loss of fat in cheese-making is quite independent of the amount of fat in the milk," (Science and Practice of Cheese-making, page 190) but depends almost entirely upon the sanitary condition of the milk and the methods followed in manufacture. Tests made by the Instructors at the cheese factories of Western Ontario for the four seasons show only a slight difference in the loss of fat in the whey during the month of May, when the average test of the milk is about 3.3 per cent — average loss of fat whey is .217 per cent.—compared with the loss in October, when the average test of the milk is about 3.8 per cent.—average loss of fat in whey .237 per cent. This would indicate that practically one half pound (.48 per cent.) more fat per 100 lbs. milk goes into the cheese from the richer milk, and with the increased casein accounts for the well-known fact of the increased yield of cheese during the latter part of the season. In any case, milk both low and high in fat content is at all times mixed and reduces the average test for the season to about 3.5 per cent., thus keeping the loss of fat in the whey comparatively uniform except for variations produced by unsanitary conditions of the milk and faulty methods of manufacture.

Misconception of Patrons *re* Law of Yield. A few patrons have evidently deluded themselves with the belief that during the fall months, when the milk increases in richness, that they are doing the factory operator a kindness by skimming off a portion of the fat, arguing that this extra fat goes to the whey tank. In fact, some people seem to imagine that this is good business any time in the season, perhaps consoling themselves with the same argument. I heard a prominent farmer state not long ago that if a portion of the milk fat was allowed to be taken off by each patron, the loss of fat in the whey could be reduced to the vanishing point. Imagine the effect on our cheese industry if this were literally followed out. These ideas show almost entire ignorance of the law of yield and the principles of cheese-making, and should be emphatically corrected, yet by our system of paying for milk by the pooling system we leave an opening for the practice of some of these ideas.

"Getting Better Test" Not Only Reason for Proper Care of Milk. Considerable stress has been laid on the statement "The better care the milk is given the better the test." This is important and true to a certain extent, but "the getting a better test" should not be the only incentive for taking proper care of the milk, since it is pointed out that the increased yield and better quality of cheese is of great importance, and to obtain which demands sanitary handling of the milk at all times, whether it is paid for by the test or not.

Mixing Night's and Morning's Milk. Some patrons have raised the objection that when the night's and morning's milk was mixed the cream which had risen on the night's milk would not be thoroughly incorporated. It has been demonstrated that the night's and morning's milk mixed and properly sampled will give a fair average test of the two lots.

Taking Samples from Weigh Can. Again, patrons sometimes ask, "When the milk is poured into the weigh can is the sample taken quickly enough that no fat has time to rise?" We have looked into this matter, and tests conducted at cheese factories in 1909 and repeated at the Dairy School in 1910 show that samples taken from the weigh can after the milk was at rest from the bottom and top of the can alternately, did not show any difference in the reading up to eight or ten minutes. The samples were taken every two minutes. This shows that for all practical purposes mixed night's and morning's milk poured into the weigh can and sampled in the usual way gives accurate results.

Milk Paid for by Test No Excuse for Deterioration. I beg to here point out that because milk is being paid for by the test, this does not exonerate patrons from liability when deteriorated milk is delivered at the factory. The law makes no distinction with respect to milk paid for by the test or otherwise. If the milk is deteriorated legal proceedings may be taken.

Enforcing Law Preventing Deterioration. The system followed the past four years of enforcing the law against deteriorated milk has had a bearing on reviving interest in the payment by test, as the public begin to realize that the practice of skimming and watering milk has been more wide-spread than formerly supposed. The deterioration of milk can easily be detected, notwithstanding the doubts expressed by a few, some of whom have been convinced at considerable cost to themselves. We find also that the systematic work is reducing the number of offenders since 1907, 60 cases, while 1910 only 27 cases were found in Western Ontario.

Mistakes of the Past. No doubt in the past some mistakes have been made through insufficient knowledge, careless methods, and a lack of backbone on the part of a few men who did the testing and had something to do with creating

some lack of confidence with respect to payment by test. This we now believe could be to a great extent overcome, as considerable assistance would be given by the Dairy Instructors.

Work of Cow Testing Associations. The recent work of cow testing associations has also been a great factor in establishing confidence among the patrons with respect to the work of testing.

Specially Trained Men to do the Testing. Having specially trained men to do the testing should be theoretically correct, but difficulties might arise in practice, although no doubt it could be done, and would put the test (both fat and casein) on a strong basis from the patron's standpoint. We have in Western Ontario about 15,000 patrons sending cream to creameries. The butter-makers do the testing. About the same number of patrons send milk to our cheese factories and could these factories be placed in the same position as the creameries in that they would all pay by test, then by paying the cheese-maker for the extra labor could he not do the testing? But if the casein test is to be adopted in addition to the fat test then it would become almost necessary to have extra men to do the work, as I cannot see how the average cheese-maker with the small amount of time at his disposal could possibly be in a position to make these two tests. By having special men to do the testing, employed either by the factories or the Government it would relieve the makers of a great responsibility, and the patrons, knowing the work was in the hands of disinterested men, complete confidence could be established. The makers would still have to take and care for the samples.

Cost of Testing. The question of cost comes in here, and if assumed by the factories would mean a direct increase in the cost of production, but since the adoption of this method should assure a more just distribution of dividends, a better quality of milk, and therefore better quality of cheese, together with a possible reduction in the number of pounds of milk required to make a pound of cheese, the increased expenditure should be justified. It is a big problem and should be viewed from a broad standpoint.

REPORTS OF JUDGES ON POULTRY EXHIBITS AT THE ONTARIO PROVINCIAL WINTER FAIR, 1910.

H. P. Schwab, Irondequoit, N.Y.

The classes, as usual were full of improvement and of a quality unapproached at any former show, the effects of conditions seen and its value improved. The exhibit in its entirety was the equal of any we have ever seen.

The 1910 Winter Fair, like its predecessors, has passed into history, leaving behind memories pleasant to recall. From a fancier's, as well as from a practical point of view, this exhibit ranks soundly in first place, with an increased average of quality birds in these classes. We found in Barred, White and Buff Rocks exceptional quality, with a general average that has improved rapidly and bids well for the future. The officers, breeders and exhibitors are tried and true, and all that pertains to a successful show is found here. The feature undoubtedly was found in the conditions of the birds shown. To exhibit your stock in its best possible shape is every breeder's duty.

Barred Plymouth Rocks. Cocks—1st, a typical bird, particularly strong in shape of back, fine head points and strong eyes, clean legs, in color a beauty, even from head to tail, finely barred under; 2nd, close up in every way, but wing not

fully grown, extra surface and under color, and one of the best in shape; 3rd, one of the very best in color, but not shown at its best condition; 4th, a strong bird in color; 5th, very good, nice eyes; other birds in this class very fine and valuable specimens, an all around grand class. Hens—1st, grand in shape, and one of the best in even color and clean, sharp barring, shown in best condition and of a quality sure to win; 2nd, one of the best in general quality, rather fat and wing not fully grown; 3rd, a good hen in type and shown perfectly; 4th, close up, with a very high quality all over; 5th, rich in color and style; here we found two defective hens that were of beautiful color and choicest barring; too bad these things occur on this kind of quality. Cockerels—1st, when we consider this bird's quality in every section we must admit him to be one of the best we have ever handled; no doubt he is the best we have seen at the "Ontario"; in color, perfectly even all over and of proper shade, narrow and evenly barred, fine shape, etc.; 2nd, another good one, fit to win at most any show, a little dark on back and tail, exceptional head and fine breast; 3rd, very bright and clean color, sharp and beautiful, fine under and good body, should make a wonderful breeder; 4th, also similar, and one of wondrous breeding quality; 5th, not fully finished, but a dandy; other placed birds of rare quality, a rich class all considered. Pullets—1st, in surface and under of right color and fine, clean barring; good shape, well-set legs, strong red eyes, truly a rare one; 2nd, another hot one, with extra clean under color, nice shape and a good winner; 3rd, grand in surface, but darker under, nicer type; 5th, clean cut and fine quality, a younger one. The other winners very fine quality birds. This class, all considered, was the best we have seen at any "Ontario." It was close picking all through, the surface color being a feature, but some of the best ran darker under, and some black feathers were found.

White Plymouth Rocks. The best class we have handled in some years. The condition shown here was good to see and pleasant to admire. Cock—1st, a noble fellow and grand winner, extra in type, fine head and of best possible color, excellently shown; 2nd, a flyer in condition and form, close up; 3rd, a rare good one, good shape; 4th and 5th, both fine show birds, good size and great quality. Hens—1st, without doubt one of the best living specimens, none better in type, and of choicest color; 2nd, another grand bird of every quality, prime shape and condition; 3rd and 4th, both close up, nice legs; all have strong red eyes. Cockerels—1st, splendid in shape and size, and perfection in condition, nice back, etc.; 2nd, another hot one of grand show form; 3rd, choice, fine head; 4th, well done and one of every promise; 5th and others of rare form. Pullets—1st, wondrous in form, color and condition, comb not of the best, but grand in every other way; 2nd, one perfection in type, and grand size, choice color; 3rd, a beauty, similar to 1st hen in type, hen needed a little filling in breast, will make a great hen; 4th, strong and desirable in every way. Other winners also of the best.

Buff Plymouth Rocks. Cocks—1st was a great winner; 2nd, good type, not at his best; 3rd, also good. Hens—1st, a rare one in color and form; others also of the same kind and sound color; some not finished at this time. Cockerels—The 1st was to our idea just right, size, shape and color very fine; 2nd a good clean one, well shown; 3rd and other winners of good quality. Pullets—1st, the gem of the class, nicely shown; 2nd, close up, a beauty; 3rd, nice form and clean color; 4th and others also of grand quality.

W. H. Butler, London.

Games. These came forward very well indeed, and some extra grand birds were to be seen. Modern Black Reds and Pyles were exceptionally good classes. Black Red Cocks—1st and special, good body shape, plenty of range, nice tail, legs and feet, still not one of the lightest on top, wins well; 2nd, a capital bird, little better color, good head and eye, nicely drawn, but very restless; 3rd, another good one, not so shapely as first, nor as good in color as second, still a very useful bird. Hens—1st, extra good body shape, lovely soft, even color, as hard as nails, her only fault being a trifle short in legs; 2nd, taller, nice head, eye, neck, fails to 1st in shoulder and a bit darker in color; 3rd, another good one, well up in class. Cockerels—1st and cup, stood out very prominently, good head, neck, shape and color, lovely wing ends, very fit indeed; 2nd and 3rd, much the same type, and likely looking birds. Pullets—1st, 2nd and 3rd, but little difference, beautiful color, well cut away, rare shape, the owner has reason to be proud of three such fine birds. Pyle Cock—1st and special, very evenly balanced bird, in splendid form, good color, shape, and stands well, nice quality feathers, fine at stern; 2nd, extra tall, good top color and body shape, good red eyes, fine neck, grand type, carried tail a trifle high, and when I went over this class he stood very close in legs and appeared quite weak; 3rd, fails in shape and color. Hens—1st, grand hen, incomparable, full of good points; 2nd, capital shape and condition, bit pale in breast, fine stern, loses to 1st in color and shape; 3rd, well up. Cockerels—1st, good head, eye, body shape, very clean in his white, good bays, easily ahead of class; 2nd and 3rd, full of good quality; after the best had been chosen, there were still some very good birds left. Pullets were really a lovely class—1st, 2nd and 3rd. very even in shape, varying only in color, and some good birds were still left out of the money. Brown Reds—Some very good birds, especially in females. Duckwings—Small, but good average class. Birchens—Small class, but some very nice quality birds. Black Sumatra, an extra good lot—1st, cock and hen, very good; cockerel, 1st and special, a very typical chap, and expect to see him and 1st pullet develop into magnificent birds. Indian Game brought out one of the best classes ever seen—Cock, 1st and special, a wonderful bird, low set, plenty of bone, good front, rich color, and the same can justly be said of 2nd and 3rd. Hens—1st, 2nd and 3rd were Indian Game in every particular. Cockerels—The winners were of the very best quality, grand in bone, size and color. Pullets—1st and 2nd easy choice, grand shape and rich color, nice, even lacing; 3rd, close up, and others well fit to win at any other show. A.O.V. brought out some very good, meritorious birds in all four sections, and by far the largest class. Black Reds—Cock, 1st and special and $50 cup, an exceptionally grand little fellow, very closely approaching perfection. about his only fault being a trifle ticked in breast; 2nd, another little gem, bit taller, clean in his black; 3rd, close up; several fit to win behind these. Hens—A very good lot. Cockerels—1st, very much the same stamp as 2nd cock, but without a break in wing bow. I noticed several in this class that look like champions for 1911. Pullets were, on the whole a very good average, and the Black Reds made a grand class. Brown Reds—Let it be understood that Brown Red or Birchen with shafty or mossy central feathers in breast destroy the desirable contrast in color; nice even rounded lacing, sloping at the thighs give the bird a well bred appearance; 1st cock and cockerel well ahead of class; balance too soft and long in feather. Hens and pullets were indeed a really good lot. Duckwing—The best lot I ever saw at our "Ontario." Silvers—Standing well forward and of extraordinary quality. Pyle Cock—1st, one of

the tallest yet seen, excellent head, neck, body shape, light color and stands well; 2nd, 3rd and 4th, very little choice; the good points of one are counterbalanced in the others. Hens—A very nice lot, both in shape and color. Cockerels—1st, special and cup, a walk-away in every particular; I expect to see this bird a champion in the cock class next year; 2nd, a very promising bird, and several others very close up. White and Black Game Bantams made a grand display; some very fine birds in both classes. Indians—Small, but good. Wheaten and Old English in A. O. V. finished one of the best shows of Game and Game Bantams ever seen in Canada.

WM. MCNEIL, LONDON.

Golden Spangled Hamburgs. 1st cock a little off on comb, good in lobes and grand in color all over, with a well spangled breast, an easy winner; 2nd, good in comb, fair lobes, good hackle and saddle, good tail, but off on breast and not well spangled; 3rd, another fair bird, not as good in comb or ear lobes, fair hackle and saddle, but not so good in tail, and off on breast, white under-color; balance of class all fair birds; 1st hen was a good one, fair to win anywhere, good head and fair comb, a little off on ear lobes, good neck, back and tail, and well spangled all over, grand in color; 2nd, just about as good as 1st; 3rd, nice head and comb, fair hackle, good back, well spangled breast, but light in under-color; balance of class fair birds. 1st cockerel was a grand bird, with good head and comb, nice wattles and ear lobes, with a good striped hackle and saddle, nice back, good color and a grand tail, breast well spangled and very little white; 2nd, another good one, close up to 1st; 3rd, hardly as good in comb or lobes, good saddle and hackle, but wing bars too dark, breast hardly as well spangled as 1st or 2nd; this class was a good one, and I haven't seen so many good golden spangled cockerels for a long time. Pullets were a big class; 1st was about as good as I have seen for some time, nice head and comb, good ear lobes and wattles, with a good striped hackle, and grand in color, with a good shaped back nicely spangled, carried a nice tail, with a grand breast and the right shaped spangle; 2nd and 3rd, both good ones, either good enough to win a first; 4th, another nice one; balance of class fair, not a poor one in the lot.

Silver Spangled. 1st cock, good head and comb, and nice ear lobes and wattles, good neck, back, with a grand saddle and tail, a well spangled breast, good color, but a little creamy; 2nd, another good one, fair head and comb, not so good in ear lobe, fair back, tail hardly out in full, good breast, nice color; 3rd, close up to second; balance of class fair. 1st hen an easy winner and in the pink of condition, with a nice comb and ear lobes, good hackle, grand colored back, with a good spangle, grand tail, good breast; 2nd, another fine hen, large in size, not so good in head or comb as first, well spangled all over, tail a little high; 3rd, another good one, but not hardly in show shape; 4th, close up to 3rd; balance of class good. 1st cockerel looked to be just imported, fine head and comb, grand tail, good back, well spangled on breast; 2nd, another nice one, but not so large, looked a little younger, nice comb, ear lobes and wattles, grand tail, and a well spangled breast; 3rd, close up to 2nd. 1st pullet is a nice one, nice neat comb, good head and lobes, grand hackle, nice back, good tail, well spangled breast of the right type; 2nd, another good one, fair head and comb, not so good in hackle as first, well spangled back, but hardly good enough in sheen; 3rd and 4th, both good; balance of class, all but one, were fit to win anywhere.

Golden Pencilled. 1st was a grand old cock, nice head and comb, good wattles, neck, back and breast, a good golden bay, with a grand black tail, laced

just about right; 2nd and 3rd, fair. 1st hen was about as good as I have ever seen; 2nd, another good one; 3rd, fair. 1st cockerel, an extra good one, with a good head, nice comb, ear lobe and wattles, good rich golden bay all over, with an extra good black tail, well laced; 2nd, another good one, close up to 1st, but a little dark in breast; 3rd, another good one, with a grand tail; balance of class good. 1st pullet a grand bird, nice head, ear lobes and comb, good hackle, nice pencilled back, with a good tail, grand breast; I had my doubts about her being a hen or pullet, but gave her the benefit of the doubt; after the envelopes were taken down, I saw the owner and asked him; he stated she was a pullet, so that removed the doubt from my mind; 2nd and 3rd, both good pullets; balance of class fair.

Silver Pencilled. First cock—good head, nice comb, good ear lobes and wattles, grand in color all over, nice black tail, well laced; 2nd, another good, big bird, and would have run the first one pretty close, only he was creamy, and hardly fit to be shown; 3rd, a fair bird. 1st hen—fair head, good comb, ear lobes and wattles, well pencilled hackle, back and breast and good tail; 2nd, another fair one, but too dark in pencilling; 3rd, close up to second. 1st cockerel—a grand mate for the cock, nice head, grand comb, ear lobes and wattles, good in color all over, with a splendid black tail, sickle and tail coverts nicely laced, but a little dark on fluff; 2nd, another nice one, good, big bird, good head and comb, a little creamy, tail good black, but sickles not hardly right in lacing; 3rd, another good one and close up to 2nd. 1st pullet—a good one, fair head, good comb, ear lobes and wattles, nice hackle, good back and tail and a grand pencilled breast; 2nd, another good one, fair head and comb, good ear lobes and wattles, splendid hackle and back, good tail, breast not as well pencilled as 1st; 3rd, another good one, but a little out of condition; balance of class fair.

Black Hamburgs were a grand class all through. 1st cock—a little off on comb, good ear lobes, nice wattles, grand in color all over, and a very fine tail; this bird was a good type of Hamburg all through and as green as a bottle; 2nd, another good one, better in comb, not so good in ear lobes, good color all over, but tail was a little bronzed; 3rd and 4th, close up to 2nd; balance of class all good. 1st hen was an extra good one, good head, ear lobes, comb and wattles, grand in color all over, with a nice tail; 2nd, another good one, not so good in comb or ear lobes, and a little shorter on leg, otherwise good; not much choice between 3rd and 4th; balance of class good. 1st cockerel an easy winner, good comb, grand ear lobes, nice wattles, nice neck, back and good tail; 2nd, another good one, not hardly so good in ear lobes, good neck and back, grand in color, but did not carry as good a tail; 3rd and 4th, not much choice. 1st pullet, good head and comb, ear lobes and wattles, nice length of neck, good color, grand shaped back, nice tail and good length of leg; 2nd, another good one, hardly so good in comb, good ear lobes and wattles, nice back, good color, grand tail, a little short on leg; 3rd and 4th, good enough to win anywhere; balance of class good but one.

Golden Sebright Bantams were a nice class. 1st cock—a grand bird; I think he has been around the shows for the last few years, and is still fit to win; one of the best Golden Sebrights I have seen; 2nd and 3rd, both good ones; 1st hen—another old one that I think has been shown with the cock for years, good in color, with very fine lacing; 2nd, another good one, but a little heavier laced; 3rd, close up to second. 1st cockerel is a good one, and will be heard from this winter, about the right color, nice golden yellow; 2nd, another good one, and no doubt if he lives to be a cock will beat the first one, but was near dying when I judged

him; I think the shock was too much for him; 3rd, another good one, but hardly so well laced. 1st pullet—nice head and comb, grand in color, well laced, with a good tail, nice breast; 2nd and 3rd, both good ones; balance of class all good.

Silver Sebrights were a grand class. 1st cock was a fine one, and I had my doubts if he was a cock or cockerel, but as I wasn't sure I gave him the benefit of the doubt; he had a nice head and comb, well laced, and a grand tail, good breast, just the right type for a Sebright; 2nd, another nice one, hardly as good in comb or ear lobes, nice hackle, good back, fair tail, not so good on breast as first; 3rd, another good one, fair comb, wattles and ear lobes, not so good on hackle, good back, nice tail, hardly as good on breast; balance of class good. 1st hen—a nice one, good head, comb, wattles and ear lobes, grand neck, good, well laced back, nice tail and grand breast; 2nd, was just about my ideal of a Sebright, although a little heavy in lacing, she was the best type of a Sebright in the show, and I believe next year she will be an easy winner if she lives; 3rd, another good one, but a little large; balance of class all good. 1st cockerel was a grand bird, a little coarse on comb, with good head, nice wattles and lobes, well laced neck and back, with a grand tail, splendid breast, an easy winner; 2nd, another good one, a little better on comb, good neck, well laced back, good tail and nice breast; 3rd, another good one, but a little large and sickle feathers too long; balance of class all good. 1st pullet was a good one, good comb, nice wattles and ear lobes, grand neck, good back, and the right kind of a laced tail, in good shape; 2nd, another good one, but a little heavier laced than first; 3rd, close up to 2nd; balance of class good.

Black Rose Comb. This was a grand class, but when I handled them they were not as good as they appeared in the coop. There was quite a few of them with purple barring, some with white tips, and others with red feathers. 1st cock was a nice one, good comb, a grand pair of ear lobes in shape, but a little rough on surface, with a nice back, a good pair of sickles, but tail covers a little short, hardly out full enough, splendid in color, and carried a nice wing; 2nd, a grand old bird, good shaped comb, nice pair of ear lobes, but very white in face, grand back, splendid tail, about the right type for a Black Rose Comb; 3rd, another nice bird, good head, comb and nice ear lobes, good hackle and back, but tail pointed too much like a Game cock. 1st hen—grand in shape, good comb and ear lobes, nice neck and back, splendid shaped tail, nice black, but not a good green black, the right type for a Black Rose Comb; 2nd, another good one, a little better in color but not so good in shape; 3rd, close up to 2nd. There was a grand lot of cockerels, any of them almost good enough to win. 1st had a splendid comb, extra good in ear lobes, extra good in wattles, with a good neck and grand back, a grand tail, and about the right type for a Rose Comb; 2nd, another one about as good as first, but lacked a little in ear lobes; 3rd, about the same type as 1st, about the same color, and 4th close up to 3rd. 1st pullet a good one, with good head and comb, grand lobes, nice neck, with the right shaped back and tail; 2nd another good one, just about the same style as the first, she ran her pretty hard; 3rd and 4th not much difference between.

White Rose Combs. 1st cock, fair comb, nice lobes, good neck; nice back, grand tail; 2nd another nice one with good head and comb, good lobes, nice neck, good back, but lacks in tail; 3rd close up to second. 1st hen a little gem, about the best in the class; 2nd another nice one; 3rd close up to second; 1st cockerel same type as cock, with extra fine tail; balance of class good; pullets all fit to win.

Plain Booted. First cock was a grand bird, with a fair comb, nice neck and back, with a good tail; 2nd another good one, good head, comb, neck and back, not hardly as good a tail nor so well booted as 1st: 3rd another nice one; 1st hen

a good one, nice head, good comb, good neck and back, grand tail, good leg and toe feathers; 2nd another good one, good comb, nice neck, good tail, not so good on leg and toe feathering; 3rd close up to 2nd. 1st cockerel a nice bird, good head and comb, nice neck and back, good tail and leg and toe feathering; 2nd another nice one, with a nice comb, nice neck, good shaped back, hardly as good in tail, a little off in toe feathering and close up to second. 1st pullet a good one, nice head and comb, good neck and back and tail, good leg and toe feathering; 2nd another nice one, fair comb, good neck, tail, nice back, not so good in leg and toe feathering; 3rd another good one.

Booted, Bearded, White. 1st and 2nd cocks both good and fit to win anywhere. 1st hen a nice one and an easy winner; 2nd fair. 1st and 2nd cockerels both good. 1st, 2nd and 3rd pullets all good.

Black Tailed Japanese. 1st cock was a nice one, an easy winner; 2nd fair. 1st and 2nd hens little difference between them; 3rd a fair hen. 1st cockerel an extra good one. 1st and 2nd pullets both good.

White Japanese. 1st cock fair bird. 1st and 2nd hens grand; 1st wins the special for best ornamental bantam in the show; 3rd fair. 1st cockerel and 1st and 2nd pullets all fair.

Black Japanese. A small class, but good.

A. O. V. Japanese. A small class, with an extra good cock and hen.

White Bearded Polish Bantams. Was a grand class; 1st cock about as good as I have seen anywhere, and an easy winner; 2nd another good one, if his crest was only out he would give 1st cock a hard run; 3rd another good one. 1st hen is a grand one, splendid crest, good beard, good shaped back and tail, grand legs; 2nd another good one; 3rd close up to 2nd. 1st cockerel about as good a Poland as I have seen for some time; he is the making of a grand old bird, fine crest, good shape, good back, nice tail; 2nd and 3rd both good and will make grand old birds; balance of class good. 1st pullet a nice one, good crest and beard, good back, well shaped tail; 2nd another nice one, fine crest, good shape, a little shorter on leg, good tail; 3rd another nice one; balance of class good.

Unbearded. 1st cock was a good one, splendid shape, good crest, good color, a little too large and long on leg; 2nd a fair bird but out of condition. 1st and 2nd hens both good, but nothing like the bearded. 1st cockerel a grand little bird, and will make a fine old cock; 2nd and 3rd both good. 1st pullet a nice one, an easy winner; 2nd and 3rd too young but good.

A. O. V. Bantams. These were all Buff Polish Bants; 1st and 2nd hens both nice, good crest and color; no cock bird. 1st cockerel very nice but young. 1st and 2nd pullets both good, good color and shape, but a little young.

Silkies were a small class, but good in quality. In all my time I have never seen eight Silkies shown by one exhibitor as good as the ones this year. 1st cock was about as perfect as you could make them; 2nd was not much behind, both just a little on the large side. 1st and 2nd hens were about perfection. 1st and 2nd cockerels were both good ones, the 1st was a little better than the 2nd, which was a little creamy; 3rd seemed to me to be about half bred, not the true silky feather. 1st and 2nd pullets there was little choice between them; 3rd was a mate for 3rd cockerel.

GEORGE H. BURGOTT, LAWTON'S, N.Y.

S. C. White Leghorns. Cocks—1st a fair bird, good type, color and head; 2nd also a fine bird, not quite as good in head and condition; the balance of the

winners all good birds; several of the unplaced ones were also good. Hens—1st fine type, head and color; 2nd not quite finished out, fine type and color; these two birds a little outstanding from balance of class, however, the balance of class would win in many shows. Cockerels—In this class we find the gems, evidently brothers, 1st, 2nd and 3rd right along together, the three birds were so nearly alike care had to be used in not mixing them, all good type and color; 1st is a trifle better in comb, as is 2nd over 3rd. Quality was maintained right along, and in the balance of the class we found good ones. Pullets—In this class there were 59 entries. We also found some extra good ones here, the four highest a little outstanding from the balance, every one of them white, but the first being a little better in finish than the balance. The entire exhibit of S. C. white Leghorns was above par.

S. C. Brown Leghorns. Cocks—1st and 2nd a toss-up for color, both fine and proper shade; 1st wins in head; 2nd a trifle better in body shape; 3rd a fine one, not quite as clear in color, but good. This was an A1 class. Hens—Every bird shown a good one, especially in color; 1st fine head, shape and color; 2nd not quite as good in shape but grand color; 3rd another good one, and so on right down. We believe the entire hen class the best bunch we ever saw together, I believe something like 25 or 30, all good ones. It was like sorting beans, all looked alike. Cockerels—A class of 30 to 35; 1st a good colored bird, good head, no purple or smut, well coop trained and wins; 2nd, 3rd, 4th and 5th right down top-notchers. In coop 243 we found a grand colored bird, but his decidedly heavy comb and wattles leaves him out. Pullets, like the hens, were of the high class order, and as they are placed before us the task of placing the ribbons was one that no person could do nearly right unless he loves that dainty variety. They were there by dozens, all high quality, yet only 10 may have a ribbon. We say right here the difference in the winners was very slight, with the exception of 2nd, which got her place on shape, as did 5th.

S. C. Black Leghorns. Cock—1st a fairly good bird, not exceptionally high class; 2nd better in head but not as good in type. Hens—1st, 2nd and 3rd very good specimens, 1st being best in comb and leg. Cockerels—Good surface and under color, trifle weak in leg color. We found most of the cockerel class with entirely too large combs, approaching the Minorca in every way. Pullets—Here we found the gems of the class; 1st, 2nd and 3rd evidently sisters, all fine color, yellow legs and good ones, the 1st wins in comb. These three pullets are decidedly the best black Leghorns we have ever handled.

S. C. Buff Leghorns. Cocks—1st the best in color and type, but not just good in comb; neither is 2nd or 3rd; 2nd is good color; 3rd fails in wing color to 1st and 2nd. Hens—1st a fine even clean color throughout, of good shape; 2nd is also a grand one, but fails in finish, but will come later. Cockerels—1st is best in shape and color, might be better in head; 2nd and 3rd good colored birds. Pullets—1st, 2nd and 3rd good colored birds, but lack finish and development.

S. C. Buff Leghorns. A small class, but contains quality.

R. C. White Leghorns. A small class as compared to the other varieties; 1st cockerel, 1st hen and 1st pullet are three very good birds. We liked the 1st pullet very much.

R. C. Brown. While a small class, contained some quality; the 1st hen and pullet were very good; 1st cockerel was the best male.

J. H. Minshall, Brantford.

Single Comb Black Minorca was the largest class and of the best quality ever brought together at any one show in Canada. The quality was good all down the line. Many very valuable birds had to be left out of the winning. The black Minorcas numbered 168, being 40 per cent. larger than any Canadian exhibit of this breed before. Cocks—1st was a model in shape and color, grand comb and lobes, good low carriage of tail, good depth of body and fine length of back, he also won 1st at the C. N. E.; 2nd cock was of the same type, with grand color, not quite as large as 1st, otherwise close; 3rd another grand one, just as good as 1st and 2nd except comb not of Minorca type, in body and tail carriage he was fine, color sound; 4th also a good bird, especially strong in color. Hens—1st strong in color and depth of body, not as long in body as I like, not fully combed out yet; none of the hens were in the best of show shape some of them not fully through moult; 2nd a fine hen in color and shape, good head points, her only fault being a little roachy; 3rd good color, fine shape, stands too upright; 4th a model for shape, but loses on color. Several fine hens were not among the winners. The hen pen-mate of 3rd cock was a grand hen if in condition; she was 2nd pullet last year. Cockerels—Fully 20 of the 36 cockerels were of fine quality, being all of great size, color and of uniform shape; the 1st cockerel won on his fine shaped body, grand carriage of tail, fine almond shaped lobes, and a well set comb. nicely serrated, his color was almost perfect; 2nd was also good in length of body, not as good in depth of body as 1st, he was grand in color, fine lobes and comb, tail not fully out yet; 3rd also a fine one, color was sound, with fine shaped body, not as good in tail carriage as 1st and 2nd; 4th a high stationed bird with grand color and shape, fair comb and lobes, the stamp for a grand cock bird; 5th also a good one, especially strong in color; 6th another good one, strong in color of plumage, fine shape of body, nice lobes, good comb, would have been higher up only for pale legs; 7th, 8th and 9th all belonged to one exhibitor, they were all of one type and all good color and fine combs; these three all had very small lobes; I look for two of these cockerels to make grand cock birds; 10th was also a fine cockerel; one cockerel was a fine bird, but not in the money; has been over shown, was a very sick bird and could not place him. Pullets—36—1st the best pullet I ever handled, winning 1st for best female in the show; 2nd another fine one of real Minorca type and color; these two pullets stood out from all the rest of the class; the remaining birds were very even, and might change places later; many that did not win a place were of fine quality.

R. C. Black Minorcas. Cocks—1st ideal in shape with fair comb, and nice lobes, grand color, well carried tail; 2nd and 3rd also good birds, being large and of good color and shape. Hens, 13—1st hen a grand one in shape, size, color, fine comb, lobes on the small side; 2nd hen also a dandy, not the size of the 1st, but better lobes than the 1st; 3rd and 4th also good, as were three other hens, not in the best of show shape. Cockerels, 24—1st and 2nd were both of grand quality, very little to choose from, both being strong in color and fine shape; 1st wins in body shape; 2nd has best tail carriage; 1st stands better on his legs; 3rd grand head points, good color, not at his best yet; 4th another good colored one, very large, falls down on shape of legs. Pullets, 18—Here again we find a grand one, very large and a fine head, of good color and one that will take some beating; 2nd and 3rd also good; 2nd wins over 3rd on size and shape of body.

White Minorcas were a nice class and some good ones among them; 1st cock and hen were good; 1st cockerel was the best in the class, he was one of the best I

have judged for some time, being pure white and with a good carried tail. Pullets, good in lobe, but rather too much leg in some of them.

Blue Andalusians were a fine class, 1st cock and 1st hen being especially a rare hen of nice even blue, evenly laced with fine shape; 2nd and 3rd hens were also good. Cockerels—Several good ones had to be thrown out for trimmed comb; 1st cockerel fine shape, little on the dark side; 2nd and 3rd nice ones. Pullets—winners all good; 1st wins on shape; 2nd grand color, but not developed yet; 3rd also good.

Anconas were a good class; 1st cock a nice shaped bird, very good color and head points; 2nd and 3rd also nice. Hens—1st and 2nd pen mates, nice shape and color; 3rd is on the light shade of color, but good shape. Cockerels—1st real dandy, has Leghorn shape and nice color; 2nd and 3rd good color, not so shapely as 1st. Pullets—1st a real good one; 2nd and 3rd close; a grand pullet was shown as a hen, or would have been first easily if shown in right section.

Black Spanish. Small class but some good ones, 1st cock, 1st hen and 1st pullet all being extra good; two cockerels that looked like easy winners had to be thrown out for colored wings, which left the cockerel prizes to go to very small birds.

Dorkings made a nice class, especially the Silver Greys; white, small class; 1st cock and hen very fine; rest of class fine in shape, color not so good as 1st cock and 1st hen; others were good. Silver Grey—1st cock was a real Dorking in every way, shape, color, size being all that could be desired to make a winner; he won special for color and shape; rest of the cocks were close up, 2nd winning on shape over 3rd; 1st hen a beauty in shape and color; 2nd and 3rd also fine, not as good in color as 1st. Cockerels were extra fine class; 1st wins easily for his fine Dorking shape and fine color; 2nd and 3rd close to winners, not being as well developed. Pullets good class, first three winners being of fine quality, 1st winning over 2nd and 3rd in color, being nice shape as well. Colored Dorkings were a good class, 1st cock being an extra fine one; winning hens all good. Cockerels—1st and 2nd were well developed birds of good shape and color. Pullets were also good.

RICHARD OKE, LONDON.

Orpington Buffs. Cocks—1st poor comb, elegant golden buff, lacks breast; 2nd better in front, fails in tail and lobe, good color; 3rd pinches in tail, not as level. Hens—1st fair eye, good type of color, bit peppery and pinched in tail, good legs, feet and breast color; 3rd typical, not as level as 1st and 2nd, bit light underneath. Cockerels—1st excellent color but fails in breast and under color of neck; 2nd fails in comb and wants breast, good color, bit shafty in front; 3rd high up. Pullets—1st fair comb, nice, even, level, pinched in tail, good front; 2nd fair comb, nice type and color, fails to 1st in front, good tail, nice color, off in comb, not as even surface. *Blacks.* Cocks—1st good head, bit short in back and shanks, good fit and color; 2nd beefy in comb, good shape and tail, better length of thigh than 1st, not as good body; 3rd good color, pinched in tail and long in leg. Hens—1st best Orpington in show, good head, color, type, tail and front; 2nd neat head, fair color and spread of tail, fails in size of front to 1st, short in shank; 3rd bit Cochin shape, good head and eye. Cockerel—1st nice, big, good color and head, pinched in saddle; 2nd nice color, big, fails in front and gay tailed; 3rd nice color, big, good front, off on back. Pullets—1st grand color, coarse in comb and

pinched in tail, good front, a good one; 2nd shows bit purple, tail not in, nice; 3rd better size than 2nd, pinched in tail. *White.* Cocks—1st nice shape and a good one; 2nd rough in comb, good eye and type, lacks breast; 3rd fails in breast, brassy. Hens—1st good in color, tail and front, a nice hen; 2nd close up, but not so mature in feather, grand shape, not as good in tail; 3rd nice, fails in comb and eye. Cockerel—1st fair comb, good feather and color, pinched in tail, good front; 2nd whiter, bit narrow; 3rd bit "Dotte" in shape, nice but not furnished. Pullets—1st poor comb, nice color, pinched in tail; 2nd nice comb, good shape, bit smaller; 3rd nice, stern bit high, nice head, a good one.

R. I. Reds, S. C. Cocks—1st nice shape, body and head, good color, top and under; 2nd poor in comb, good length, tail not in, good under color; 3rd comb frosted, light in color, high tail, good breast. Hens—1st nice, good color and head, nice length, bit pinched in tail; 2nd nice hen, fails in color of eye, trifle shafty, pinched tail and light under color; 3rd light in color, pinched tail, but nice. Cockerels—1st rough in comb, big, nice color of eye, back, tail and under color; 2nd bit pinched in saddle, good color, a nice one; 3rd neat but dark, level top, good body. Pullets—1st good back head and comb, nice under color; 2nd small and short in back, good legs and feet; 3rd nice, pinched in tail and fails in color of eye, long in back.

Rhode Island Reds, R. C. Cocks—1st nice, bit rough in comb, good neck, nice color, under and surface; 2nd nice in shape, fair comb, good eye, not even on top, good tail and under color; 3rd good head and eye, short in back. Hens—1st good back, bit mottled in color, good tail, light underneath; 2nd mottled, bit high in tail, good size and length of back; 3rd mottled, pinched in tail. Cockerels—1st elegant color, slack in breast, good under color and tail; 2nd big, bit uneven, fair shape and length of back; 3rd not as good under color, striping in hackle and off on comb; 4th best in color, but had rough comb, good type. Pullets—1st neat comb, nice eye, good length of back, fair color, good underneath, but fails a little in wing; 2nd young, nice rich color, good in color of tail, but fails in wing color; 3rd good, big, pinched in tail and rough in comb, good length of back, good under color, but fails in wing.

GEORGE ROBERTSON, OTTAWA.

Light Brahmas. A great class; several grand birds were placed lower in the list, through lack of proper fitting, than they otherwise would have been. Some of the birds showed the effect of severe colds, their heads being badly swelled; 1st cock a grand bird all over, sound in color throughout; 2nd another of the same kind, but not in full plumage; 3rd also a grand one, but weakens slightly in tail. 1st hen a young one, nice clean color, a little strong in hackle, good shape; 2nd a good one, but shows age; 3rd a grand one that could have been made a lot better by proper fitting. No. 366 a real beauty, had to be left out on account of black feathers in back. 1st cockerel not as large as some of the others, but good type and perfectly sound in color; 2nd another good one, hardly as sound in color; 3rd close up; 4th a richly colored one, just weakens a little in tail and hackle. 1st pullet a real beauty, good type, grand in color throughout, winning president's medal for best bird in Asiatic class; 2nd nice one, but not quite so clean; 3rd close up, but not so clean in back; 4th a good clean one, not so strong in lacing.

Dark Brahmas. 1st cock an easy winner, good shape and nice clean color; 2nd and 3rd not so clean in color, very little between them, 2nd being a little

better in breast. 1st hen a good clean colored one; 2nd not quite so clean in color. 1st cockerel good rich clean color all over; 2nd shows a little white on breast, otherwise clean; 3rd shows a lot of white on breast. 1st pullet a nice clean one, shown in good fit; 2nd and 3rd close up.

White Cochins. 1st cock a very white one; 2nd not so good in color and small. 1st and 2nd hens pen-mates, both good color, 1st a little better in type; 3rd not quite so good in back and color. 1st cockerel nice color and type; 2nd good color larger, but fails on breast shape. 1st and 2nd pullets pen-mates, both good color, 1st a little better in back; 3rd nice but loses in both color and shape.

Black Cochins. Two cocks, neither in very good feather; 2nd not so good on back. 1st hen good type; 2nd loses in shape; 3rd not so good in back. 1st cockerel more mature, showing better shape and color than 2nd, which is young. Pullets same.

Partridge Cochins. 1st cock a grand Cochin, rich in color, but in poor feather; 2nd a clean rich colored one, but not so massive as the winner; 3rd another good clean one, but shows some purple barring on breast. 1st hen good in type and rich in color and penciling; 2nd another rich one; 3rd pen-mate of 2nd, was not so rich in color; 4th good type and grand pencilling, but lacked depth of color. 1st cockerel grand in shape and color; 2nd good, but not so good in shape as 1st, shows a tinge of red on breast; 3rd close up, runs light in eye and shows a tinge of red on breast and thighs. 1st pullet rich in color and pencilling; 2nd and 3rd fail in pencilling.

Buff Cochins. A grand class; 1st cock a little higher in color, but very even and sound to the skin, nice head and rich eye; 2nd a grand Cochin, beautiful even shade of buff, but very light in eye, not so good in head, and runs white underneath, especially in hackle; 3rd another good one, not so massive as the other two, nor so even in color. 1st hen nice type and even color; 2nd and 3rd grand hens, close up. 1st cockerel a good one, a shade high in color, but sound throughout; 2nd not so good in eye, does not handle out so well; 3rd close up. Pullets—The three winners all of good type and good sound color.

White Langshans. In this class many of the birds were very carelessly shown, feathers showing grey being common in some specimens; 1st cock good type and color, an easy winner; 2nd fails in color; 3rd poor color, fails on type. 1st hen an easy winner on both type and color; 3rd fails to 2nd on color, shows gray on plumage. 1st cockerel good bodied bird, bad on legs as were all the cockerels; 2nd younger, lacks breast; 3rd not developed, narrow, long in back. 1st pullet poor eye color, fair type and white; 2nd not so good in back shape, and shows gray in plumage; her pen-mate was best type of the lot, but on account of lack of foot feathers had to be left out; 3rd small, undeveloped.

Black Langshans. Some grand ones in this class; 1st cock grand in type and color; 2nd also good, but loses on both shape and color; 3rd another nice one, but a little bronzy in color and tail not in full. 1st hen really good in both shape and color; 2nd and 3rd good ones, very close up. 1st cockerel grand rich color; 2nd same in color, does not stand so well, and shade light in eye; 3rd real good one, shows a little purple barring on tail coverts and does not carry his tail just nice. 1st and 2nd pullets very little between them, both rich in color, but 2nd stands a little close at hocks; 3rd not so rich in color.

White Cochin Bantams. 1st cock good type and very white; 2nd not quite so good in color, but nice one; 3rd shows a little gray in wing. 1st, 2nd and 3rd hens all good and very little between them. 1st cockerel a beauty, grand in type and snow white; 2nd not so good in type; 3rd loses on type and color. 1st pullet a fit

pen-mate for 1st cockerel, a beauty both in type and color; 2nd fails in both shape and color to winner; 3rd a good one, but falls short of winners.

Buff Cochin Bantams. 1st cock nice type, good color; 2nd a little stronger on wing bow; 3rd nice, shows a little black in tail. 1st hen good shape, nice even color; 2nd also nice shape, weaker in under color; 3rd nice even surface, but not rich enough. 1st cockerel shade light, but very even in surface; 2nd nice surface color, fails under; 3rd strong on wing bow and weak under. 1st pullet good type, rich color; 2nd nice color, little long in back; 3rd a nice colored little one.

Partridge Cochin Bantams. 1st cock clean in color but pinched in back; 2nd a little fellow, red in breast; 3rd lacks hackle striping, but otherwise rich in color and best in type, but over large. 1st hen good type, nice color; 2nd not so rich in color; 3rd not so good in either shape or color. 1st cockerel nice clean color; 2nd runs a little light weight in hackle, otherwise good color; 3rd young, not feathered out. Pullet—1st good type and color; 2nd not so rich in color or as good in shape; 3rd young, fails in pencilling.

Black Cochins. A large class of grand quality; 1st cock a beauty in both shape and color, rich green sheen, free from purple, an easy winner; 2nd and 3rd both nice, 3rd losing to 2nd on shape of back, not so broad across the saddle. 1st hen a nice one with very rich color; 2nd a good one, but not so rich in color; 3rd very close up; 4th a grand type, fails in condition and color. I had picked out as the winner the pen mate of the 1st cock, a perfect little beauty, but was forced to disqualify her on account of red in neck feathers; 1st cockerel a beauty in both shape and color; 2nd a mate for 1st; 3rd a nice one, good color but rather light in eye. 1st pullet a beauty in both type and color; 2nd also a good one; 3rd fails in both type and color to winners, rather long in back.

Light Brahma Bantams: 1st cock nice clean colored little fellow; 2nd not so strong in wing color; 3rd not so clean in color. 1st hen nice clean color; 2nd a good one, fails in color of back; 3rd nice clean surface, weaker in wings. 1st cockerel large, but strong, rich color in every section; 2nd smaller but not so rich; 3rd nice clean surface, weakens in wings. 1st pullet nice clean colored one with grand tail covert, lacing could be stronger in wings; 2nd and 3rd strong in black sections, grand wings, but fails in back. The Standard very distinctly says that "positive black spots prevalent in the web of feathers of the back" is a disqualification. In both hen and pullet sections, while giving the birds the benefit of the doubt, I placed some birds lower on that account than they otherwise would have been. This was a very large class and the quality was good.

Dark Brahma Bantams: The quality in some of the birds in this class was really grand. 1st Cock a nice one; 2nd light on breast; 1st and 2nd hens pen mates and two good ones; 3rd not so clean in color. 1st cockerel a real beauty, clean and strong in color; 2nd another of same kind, not so good in breast. 1st pullet a beauty, nice clean color and pencilling; 2nd also nice but not so clear in color or so distinct in pencilling.

L. G. JARVIS, GRIMSBY.

POLANDS. *W. C. Black:* A very nice lot, quality was of the best. Four of this variety won for the third time the silver cup for the four best birds in the show. "Billy" McNeil richly deserved to win. *Buff Laced,* not a large entry, but extra nice; 1st hen the best I ever handled. *Golden Bearded* a nice entry and good. *Silver Bearded,* hardly up to last year in quality. *Golden Plain,* some extra fine birds. *White,* winning good, all in fine condition.

French Class. *Houdans*, a large entry, 1st cock winning in color; 2nd a good one, lost chiefly in color of wing; 3rd will show better in a week or so. 1st hen grand color, good shape, wins easily; 2nd not as distinct in color; 3rd not as good in shape or color. 1st Cockerel a good one, great bone, fine crest and beard, well developed toes, will make a good cock; 2nd a nice one, finer in bone, hardly as neat in crest, good color in most sections; 3rd lost in color, good shape, will make a good cock. 1st pullet, very even in mottling, black is black and white is white, just what is wanted; 2nd lost to 1st in color, good shape; 3rd not as good in crest as wing color. *Creve Coeur,* a small entry and quality not up to former years. *La Fleche,* small entry; 1st cock a grand bird, good color; 2nd hardly as rich in color of plumage. Chicks young. *Javas,* a few good specimens in both black and mottled. I would like to see a larger entry in this valuable breed. We are losing in both color and size.

Red Caps. A nice entry—1st cock good shape, nice head and comb; 2nd not as good in comb shape; 3rd off in color in some sections. 1st hen large, good color, wins easily; 2nd smaller, not as nice in shape; 3rd weak in color. 1st cockerel, color good, neat comb and wins easily; 2nd not as good in comb or color; 3rd crowding for second place, but lost in wing color. 1st pullet a neat one; 2nd not as good in color; 3rd smaller.

Water Fowl. The largest and best exhibit ever seen at this show.

Embden. 30 in class, all in fine condition, size and shape decided where the ribbons were to go.

Toulouse. 50 in class, I might say nearly all good ones. 1st gander fine shape, good color with massive head; 2nd loses chiefly in color; 3rd a good one, good head but a trifle off in body shape. 1st goose very fine, all Toulouse in shape, good color; 2nd loses to 1st in shape; 3rd not as large, good color. Young class winners fine birds, in fact I should have liked to have given more prizes, as there were several grand birds left out.

African. 28 in class—1st gander grand in color, great size; 2nd about equal, hardly as massive in head; 3rd a good one, loses in color of body. 1st goose great size, fair color; 2nd not as good in shape of body; 3rd loses a little in color and shape of body. Gander, young, a grand bird, with great head for a young gander; 2nd also a good one, not as large; 3rd about equal, loses on head at present; other good ones in class. Goose. young, 1st good color and well matured; 2nd hardly as large; 3rd finer in type.

White Chinese. 16 in class, the finest lot ever seen at this show—1st gander well defined knob, neat neck, short, compact body; 2nd nice, hardly as nice in shape of body; 3rd a little coarse in body shape, not as short. 1st goose neat in every section; 2nd just a little coarse in head shape; 3rd a trifle long in body. 1st gander young, very neat, wins easy; 2nd coarser in neck and hardly as long; 3rd not as good in shape.

Brown Chinese. A small entry, 7—1st pair good, others showing African cross.

Ducks: *Pekin.* A large entry—1st drake an old winner, grand bird, hard to fault; 2nd pressing hard for 1st honors, loses on size; 3rd a good one, lacks in shape of body. 1st duck a good one, great body shape; 2nd not as well keeled. Pekin, young—1st drake great size and length and quality of bill, hard to fault in any section; 2nd hardly as heavy in body; 3rd smaller, not as old.

Rouen. Nicest lot shown for some time—1st drake, nice color, have seen larger; 2nd lost to 1st in color; 3rd a good one in color at stern, fails in breast color. 1st and 2nd ducks, two good ones, close to 1st, larger, with better development of body,

both grand color; 3rd also a good one. 1st young drake best in class, winning in every section in color; 2nd better than 3rd in shape. 1st young duck nicely pencilled, showing grand head marking; 2nd lost more particularly in color on breast; 3rd crowding for second place, failed in general color.

Aylesbury. Nice class, some out of condition—1st drake and duck old, extra fine, very large with Aylesbury type; 2nd in drake and duck lost in size and shape of head. 1st young pair wins easily.

Cayuga. A few good ones—prizes went on color.

Indian Runner. A very nice class—prizes going chiefly on color, several specimens having that soft mellow fawn color so much desired.

Muscovy. In colored variety, some good birds. A.O.V. class some nice ones.

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.

ANNUAL MEETING.

The annual meeting of the Eastern Ontario Live Stock and Poultry Show was held in Ottawa on Friday, May 5th, 1911.

There were present, Messrs. Bright, Collins, Wallace, McCrae, Richardson, Bryson, Stephen, Gardhouse, Grisdale, Watson, Allison, Belford, Robertson and the Secretary.

The chair was occupied by Mr. BRIGHT, Vice-President.

Regrets were expressed at the unavoidable absence of the President.

The advisability of adjourning the meeting until the following day when the President could be present was discussed. On account of the inconvenience this would occasion to a number of the Directors present, it was decided to proceed with the business of the meeting.

Moved by Mr. GARDHOUSE, seconded by Mr. RICHARDSON, "That as the minutes of the last annual meeting have been published in the annual report of the Live Stock Associations, they be accepted as read and adopted." Carried.

REPORT OF EXECUTIVE COMMITTEE.

The report of the Executive Committee was read by the Secretary:

ATTENDANCE: The attendance at the last show was much greater than any previous year. The gate receipts amount to $1,067.50, and Farmers' Institute fees, $125, a total of $1,192.50, which is $264.10 in excess of these receipts for the previous year. The gate receipts for the different days of the show are as follows:

Tuesday	$165 65	Thursday	$444 95
Wednesday	350 90	Friday	106 00

A noticeable feature in connection with the attendance this year was the large number of Farmer Institute members. The following is a statement of the passes issued to members of the different institutes that were affiliated with the show.

Carleton	395	Renfrew South	37
Dundas	108	Russell	136
Glengarry	78	Stormont	112
Grenville South	28		
Prescott	66	Total	960

In 1910, 637 passes were issued to Institute members.

ACCOMMODATION: Previous to the show of 1911 a two-story addition was made to the show building. The upper floor was used by the lecture hall and the seed department, while the ground floor provided accommodation for 50 dairy cows and the milk room. While both the lecture hall and dairy stables proved to be entirely satisfactory there is still need for more accommodation, as the dairy stable and the sheep and swine departments were much crowded at the last show. There is also need for a proper killing room in which the cattle may be slaughtered as well as the sheep and swine. The heating apparatus should receive some attention for the next show.

COMPARATIVE STATEMENT OF ENTRIES AND PRIZES AT EASTERN ONTARIO LIVE STOCK AND POULTRY SHOWS, 1910-1911.

	No. of Entries.		Prizes Offered.		Prizes Paid.	
	1910.	1911.	1910.	1911.	1910.	1911.
Horses:			$ c.	$ c.	$ c.	$ c.
Clydesdale Stallions	37	54	435 00	435 00	435 00	420 00
Canadian-bred Clydesdale Stallions	10	13	180 00	280 00	165 00	230 00
Clydesdale Mares	16	32	130 00	140 00	130 00	140 00
Canadian-bred Clydesdale Mares	.....	9	.....	140 00	.....	140 00
Shires	1	3	95 00	140 00	35 00	80 00
Hackneys	11	11	310 00	300 00	180 00	145 00
Standard-breds	2	3	95 00	95 00	60 00	80 00
Thoroughbreds	4	3	95 00	95 00	90 00	80 00
Hunters	18	12	60 00	60 00	60 00	60 00
Ponies	.....	6	.....	60 00	.....	45 00
Heavy Draughts	15	11	145 00	145 00	145 00	140 00
	114	157	1,545 00	1,920 00	1,300 00	1,595 00
Beef Cattle:						
Shorthorns	31	14	315 00	315 00	315 00	225 00
Herefords and Aberdeen-Angus	4	12	100 00	100 00	60 00	80 00
Galloways and Devons	8	2	100 00	100 00	100 00	30 00
Grades or Crosses	32	28	430 00	430 00	415 00	430 00
Dressed Carcasses	13	7	85 00	85 00	85 00	85 00
Export Steers	7	5	180 00	180 00	180 00	180 00
Specials	.....	.....	150 00	60 00	150 00	60 00
	95	68	1,360 00	1,270 00	1,305 00	1,090 00
Dairy Cattle:						
Ayrshires	7	18	215 00	215 00	165 00	208 00
Holsteins	5	19	165 00	315 00	80 00	295 00
Shorthorns	3	4	165 00	165 00	50 00	75 00
Jerseys and Guernseys	1	14	165 00	165 00	25 00	165 00
Grades	13	10	165 00	165 00	155 00	145 00
Specials	.....	.....	200 00	60 00	170 00	60 00
	29	65	1,075 00	1,085 00	645 00	948 00
Sheep:						
Cotswolds	26	17	89 00	89 00	89 00	89 00
Lincolns	1	21	89 00	89 00	8 00	89 00
Leicesters	2	21	89 00	89 00	18 00	86 00
Oxfords	23	21	89 00	89 00	81 00	89 00
Shropshires	25	25	89 00	89 00	86 00	89 00
Southdowns	21	20	89 00	89 00	89 00	86 00
Dorset Horns	15	10	89 00	89 00	78 00	64 00
Hampshires and Suffolks	9	5	74 00	74 00	66 00	40 00
Grades and Crosses	31	49	89 00	89 00	89 00	89 00
	153	169	786 00	786 00	604 00	721 00
Swine:						
Yorkshires	20	36	113 00	113 00	106 00	113 00
Berkshires	12	18	84 00	84 00	64 00	72 00
Tamworths	10	14	89 00	80 00	52 00	74 00
Grades and Crosses	21	36	89 00	80 00	85 00	80 00
Export Bacon Hogs (Alive]	15	30	185 00	185 00	185 00	185 00
Export Bacon Hogs (Dressed)	12	27	185 00	185 00	162 50	185 00
	90	161	745 00	727 00	654 50	709 00
Seeds:	72	86	143 00	351 00	135 00	125 00

COMPARATIVE STATEMENT OF ENTRIES AND PRIZES AT EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1910-1911.—*Continued.*

	No. of Entries.		Prizes Offered.		Prizes Paid.	
	1910	1911	1910	1911	1910	1911
Poultry :			$ c.	$ c.	$ c.	$ c.
Large Fowls	1,296	1,421	.....	.....	1,044 00	1,116 50
Bantams	180	172	.....	.....	177 50	182 00
Turkeys, Geese, Ducks	137	155	.....	.....	213 50	229 50
Pigeons and Pet Stock	299	268	.....	.....	160 00	167 00
Sale Class	153	167	.....	.....	67 00	65 00
Dressed Poultry	104	119	.....	.....	123 00	130 25
	2,169	2,302	.....	.....	1,785 00	1,890 25
Totals	2,722	3,028	.....	.....	6,428 50	7,078 25

FINANCES: There is a considerable decrease in the cash on hand at the end of the last show as compared with the year previous. The financial statement presented shows a balance of cash on hand of $1,331.15. This is less than was shown in the previous statement by $400.71. On account of the rapid growth of the show there is a general increase in the expenses. This is especially noticeable in the prize money. In 1910 there was paid out for prizes, $6,428.50, while in 1911 the prizes paid amounted to $7,078.25, an increase of $649.75. The Ontario Legislature has voted for the coming show $8,500, which is $1,000 more than was given for the last show. While this increased amount will be largely available for additions to the prize list, it may be well to reserve a portion to be used for the general expenses.

FINANCIAL STATEMENT

of the EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW for the YEAR Ending MARCH 31ST, 1911.

Receipts.

Cash on hand as per last Report	$1,731 86	
Legislative grant	7,500 00	
Canadian Clydesdale Breeders' Association grant, 1910	400 00	
Canadian Clydesdale Breeders' Association grant, 1911	500 00	
Dominion Shorthorn Breeders' Association grant	125 00	
Holstein Friesian Association grant	140 00	
Ayrshire Breeders' Association grant	50 00	
Yorkshire Breeders' Association grant	50 00	
Dominion Swine Breeders Association grant	25 00	
Special prizes for Live Stock	85 00	
Special prizes for Poultry	112 00	
Special prizes for Poultry, 1912	35 00	
Gate receipts and Farmers' Institutes Fees	1,192 50	
Entry fees	1,878 00	
Advertising space in Prize List and Show Building	190 00	
Sale of Catalogues	37 20	
Sale of carcasses and dressed poultry	1,391 67	
Sale of Live Poultry	265 00	
Freight refunds returned	64 40	
Membership fees to Live Stock Associations	4 00	
		$15,776 63

FINANCIAL STATEMENT.—*Continued.*

Expenditures.

Directors' expenses	$465 78	
Postage	277 00	
Stationery and printing	610 14	
Badges and prize ribbons	156 47	
Advertising	874 06	
Office help	153 94	
Telegraph, telephone and express	92 84	
Judges, judges' clerks and lecturers	736 95	
General help	837 77	
Lighting building, 1910 and 1911	327 00	
Fuel	188 75	
Fitting building	108 29	
Straw and shavings	114 35	
Poultry feed	51 10	
Dressing carcasses	45 50	
Testing of dairy cows	97 70	
Music	74 00	
Lunch room	27 25	
Insurance on Poultry coops and fittings	22 50	
Prize money paid	7,078 25	
Freight refunds to exhibitors	294 82	
Entry fees refunded	8 50	
Memberships to Live Stock Associations	4 00	
Reported meetings	75 00	
Exhibitors for carcasses and Dressed Poultry sold	1,391 67	
Exhibitors for live birds sold	268 00	
Dressed poultry lost at show of 1910	12 60	
Allowance to H. and J. McKee	32 70	
Miscellaneous	18 55	
		$14,445 48
Balance Cash on hand		$1,331 15

PETER WHITE,
President.
D. T. ELDERKIN,
Treasurer.

Examined and found correct,
this 3rd day of May, 1911.

W. R. REEK, *Auditor.*

Moved by Mr. BRIGHT, seconded by Mr. GRISDALE, "That the report of the Executive Committee be adopted." Carried.

In moving the adoption of the report, Mr. Bright briefly reviewed the growth of the Show. He believed that more accommodation would be needed before the next Show, but in view of the large addition that had been made for the last Show he thought it would be well to wait until after the next Show before asking for additional accommodation. He urged the directors to unite in their efforts to make the next Show greater than any in the past and to fill the building to the utmost with exhibits of high quality. Reference was made to the generous assistance rendered by the Ottawa City Council.

Mr. GRISDALE stated that he had visited the Winter Shows in the various parts of Canada, and that the one at Ottawa was easily the leader of all except the show at Guelph. A number of the Directors expressed their satisfaction at the excellent report that the Executive Committee had been able to present. All the speakers referred particularly to the good work that has been done for the Show by Mr. WHITE, the President.

OFFICERS AND COMMITTEES FOR 1910-11.

President ..... PETER WHITE, Pembroke.
Vice-President ..... JOHN BRIGHT, Myrtle Station.
General-Director ..... A. P. WESTERVELT, Toronto.
Secretary Treasurer ..... D. T. ELDERKIN, Ottawa.

DIRECTORS:

PETER WHITE, Pembroke.
JOHN BRIGHT, Myrtle Station.
WM. SMITH, Columbus.
E. WATSON, Hudson Heights, Que.
J. W. ALLISON, Morrisburg.
J. H. GRISDALE, Ottawa.
W. F. STEPHEN, Huntingdon, Que.
WM. JONES, Zenda.
P. O. COLLINS, Bowesville.
W. A. WALLACE, Kars.
R. A. HERON, Billings Bridge.
Lt.-Col. D. MCCRAE, Guelph.
R. RICHARDSON, South March.
JAS. BRYSON, Brysonville.
JOHN GARDHOUSE, Highfield.
GEO. ROBERTSON, Ottawa.
J. A. BELFORD, Ottawa.
GEO. HIGMAN, Ottawa.
GEO. LAKE, Ottawa.

COMMITTEES.

Executive Committee: THE PRESIDENT; THE VICE-PRESIDENT; THE SECRETARY; A. P. WESTERVELT; J. H. GRISDALE; J. W. ALLISON; GEO ROBERTSON.

Horses: JOHN BRIGHT, Myrtle Station; WM. SMITH, Columbus; B. ROTHWELL, Ottawa; ROBERT GRAHAM, Renfrew; J. J. BLACK, Winchester; JAS. K. PAISLEY, Ottawa; ALBERT J. NESS, Howick, Que.; WM. HODGINS, Shawville, Que.; J. W. ALLISON, Morrisburg; ROBERT HUNTER, Jr., Maxville; GEO. HAY, Lachute, Que.; Dr. R. E. WEBSTER, Ottawa; AMBROSE O'BRIEN, Renfrew; WM. MEHAREY, Russell; J. D. EADIE, Vars; E. WATSON, Hudson Heights, Que.

Beef Cattle: J. H. GRISDALE, Ottawa; JOHN GARDHOUSE, Highfield; W. F. STEPHEN, Huntingdon, Que.; PETER WHITE, Pembroke; THOS. MCDOWELL, Shawville, Que.; Hon. W. C. EDWARDS, Rockland; T. J. GRAHAM, Mosgrove; R. RICHARDSON, South March; SAMUEL MCCLELLAND, Beachburg; JOHN FRANCIS, Pakenham; PETER COCHRANE, Almonte.

Sheep: W. A. WALLACE, Kars; N. F. WILSON, Cumberland; R. RICHARDSON, South March; ANDREW WHITELAW, Guelph; R. R. SANGSTER, Lancaster; GEO. BRADLEY, Carsonby; JOHN BARR, Bromley; Lt.-Col. D. MCCRAE, Guelph; JAS. BRYSON, Brysonville.

Swine: P. O. COLLINS, Bowesville; WM. JONES, Zenda; R. J. GARBUTT, Belleville; J. C. SMITH, Ottawa; J. H. GRISDALE, Ottawa; DAVID BARR, Jr., Renfrew; W. H. MCNISH, Lyn; A. H. FOSTER, Twin Elm; D. C. FLATT, Millgrove; A. DYNES, Ottawa; R. A. HERON, Billings Bridge.

Dairy Cattle: W. F. STEPHEN, Huntingdon, Que.; JAS. BRYSON, Brysonville; J. H. GRISDALE, Ottawa; A. SCOTT, City View; N. SANGSTER, Ormstown, Que.; W. H. MCNISH, Lyn; JOS. MEILLEUR, Ottawa; B. ROTHWELL, Ottawa; R. R. NESS, Howick, Que.; Senator D. DERBYSHIRE, Brockville; P. CLARK, Ottawa; T. A. SPRATT, Billings Bridge; JOHN MCKELLAR, Westboro; R. HERON, Billings Bridge; J. H. CALDWELL, Fallowfield; J. A. CALDWELL, City View.

Poultry: GEO. ROBERTSON, Ottawa; JOHN A. BELFORD, Ottawa; GEO. LAKE, Ottawa; GEO. HIGMAN, Ottawa; A. W. E. HELLYER, Ottawa; W. F. GARLAND, Ottawa; F. J. BLAKE, Almonte; W. H. CARLETON, Ottawa; F. C. ELFORD, Macdonald College, Que., D. MCKELLAR, Hawkesbury; J. E. FIDLER, Brockville; Dr A. P. MCINTOSH, Spencerville; S. A. ALEXANDER, Beachburg; J. A. LAMBERTUS, Eganville; Bro. LIGOURI, LaTrappe, Que.; J. SNETSINGER, Eamer's Corners.

Seeds: T. G. RAYNOR, Ottawa; GEO. BOYCE, Merivale; B. ROTHWELL, Ottawa; G. F. BRADLEY, Carsonby; J. C. STEWART, Dalmeny; G. H. CLARK, Ottawa; L. H. NEWMAN, Ottawa; OSBORNE WRIGHT, Beachburg.

Reception Committee: PETER WHITE, Pembroke; His Worship the MAYOR OF OTTAWA; H. F. MCGIVERN, M.P., Ottawa; A. E. FRIPP, M.P.P., Ottawa; J. L. MCDOUGALL, Ottawa; GEO. HIGMAN, Ottawa; J. K. PAISLEY, Ottawa; Controller N. CHAMPAGNE, Ottawa; J. A. BELFORD, Ottawa; R. ROTHWELL, Ottawa; E. S. SKEAD, Ottawa; J. H. GRISDALE, Ottawa.

Dairy Superintendent: JAS. BRYSON, Brysonville.

Seeds Superintendent: T. G. RAYNOR, Ottawa.

Poultry Superintendent: R. E. MCKINSTRY, Ottawa.

Moved by Mr. ROBERTSON, seconded by Mr. BELFORD, "That the show be held on the days corresponding to the days of the last show." Carried.

Moved by Mr. BELFORD, seconded by Mr. ROBERTSON, "That a record be made in the minutes of this meeting expressing our great pleasure and appreciation of the advance that one of our members is making in his profession in the person of J. H. Grisdale, and that we congratulate him on his recent appointment as director of the Dominion Experimental Farms and wish him continued success." Carried.

It was suggested at the next show there should be several parades of the dairy cattle.

It was also suggested that the Pipers' band should be engaged for the next show.

Moved by Mr. ALLISON, seconded by Mr. STEPHEN, "That the Executive Committee be asked to formulate a rule that would debar from competition in the dairy test cows that are in an unhealthy condition." Carried.

Moved by Mr. RICHARDSON, seconded by Mr. WATSON, "That the revision of the prize list and rules be left to the Executive Committee." Carried.

The Executive was asked to consider the advisability of making application to the Dominion Government for a grant.

The policy of having classes for amateur exhibitors was approved of.

Moved by Mr. RICHARDSON, seconded by Mr. BELFORD, "That the appointment of the judges be left to the Executive Committee." Carried.

Mr. STEPHEN suggested that some advertising should be done in Western Quebec and points in the United States that were convenient to railways running into Ottawa.

Moved by Mr. WALLACE, seconded by Mr. RICHARDSON, "That the balance of the business be left to the Executive Committee." Carried.

Moved by Mr. ALLISON, seconded by Mr. WATSON, "That a vote of thanks be extended to the Chairman, of the meeting." Carried.

ADDRESSES DELIVERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1911.

The meetings were held in the splendid new lecture hall in the wing of the show building erected during the summer of 1910. The President of the Show, Mr. PETER WHITE, opened the first meeting on Tuesday afternoon, January 17th, 1911. In a brief address the President reviewed the rapid growth of the Show since suitable accommodations had been secured and expressed the hope that the Show would continue to advance along the lines most beneficial to the farming community.

SOME PHASES OF THE DAIRY SITUATION.

J. A. RUDDICK, DAIRY COMMISSIONER, DEPARTMENT OF AGRICULTURE, OTTAWA.

As I believe this is the first occasion on which I have addressed a meeting in connection with the Eastern Ontario Live Stock and Poultry Show, I feel it my duty to congratulate you on the progress that has been made with this institution. I have watched it grow from small beginnings to its present large proportions, and

I feel that you must be gratified at the support which it has received from all classes of people in Eastern Ontario. I am glad, also, that you are giving some prominence to the Dairy Industry in connection with this Show, because of the prominent position which that branch occupies in relation to other lines of agriculture in Eastern Ontario. I am glad to see the interest which is being taken in the milking tests which are being conducted here, and I am sure it will be productive of very much good. Being acquainted with those who are in charge of the tests, I know that the records will be reliable. A certain nobleman being a farmer, as all noblemen are in the Old Country, was particularly interested in dairying and was trying to develop the productiveness of his herd and he was beginning to get rather proud of the average yield of his cows. However, one day he picked up an American agricultural paper and read about the tremendous yield of milk by some cow in the United States and after reading it, he felt rather discouraged and spoke about the matter to a friend of his. "Why," said his friend, "I do not see anything in that to discourage you, surely you do not expect an English cow to give as much milk in a bucket as an American cow will give in the American newspaper." I know you won't have that feeling towards the dairy tests which are being conducted here.

In considering the dairy business for the year, we shall take the fiscal year ending March 31st, next. For the season 1910-11, I think, the dairymen have every reason to congratulate themselves on the record which has been made. The most important development has been a tremendous increase in the export of cream to the United States. I have here, for your information, a few figures taken from the trade and navigation returns, showing the development of that trade during the last twelve months. The first cream was shipped to the United States in August, 1909; after the Payne-Aldrich tariff came into force on August 5th, there was a change in the duty, bringing it from two cents a pound down to five cents a gallon and that makes the duty on butter, manufactured from cream taken across the line, only about one cent per pound. They at once began to build creameries on this side of the line and took the cream to large cities, such as Boston and other points. Up to the end of March, 1910, the total value of this cream shipped was $244,244. From April to October, 1910, we have shipped a total of $1,278,565 worth. If the same ratio of increase is continued up to March next as there was in October, the whole shipment of cream to the United States during the twelve months ending March 31st next, will amount to nearly three million dollars, and that is a very large item in our export trade.

You have heard it stated during the past two or three years that because the exports of dairy products have shown some decline since 1904, that there must be a decline in the industry. In the first place, I want to point out that the exports have not declined for the past two years, but on the other hand that they have increased. There are other things in connection with it that I will point out to you later. In the year ending March 31st, 1909, our exports amounted to $21,900,000; in 1910, they increased to $23,159,000, that is including cheese, butter, condensed milk, cream and casein. Up to the end of March, 1910, these three items were included in the trade and navigation returns, under one heading. Estimating the exports for the year, which will end the 31st of March, next, taking exactly the same figures for cheese and butter as we had the previous year, we have a total increase of over two million dollars, $25,240,000 being the total for the year.

Now let us see where we stand, compared with 1903, if we take into account the increased home consumption.

Total exports, 1910-11 (estimated)	$25,250,000 00
Add increased consumption as compared with 1902-3	25,000,000 00
	$50,250,00 00
Exports in 1902-3	31,667,561 00
Increase in production in 1910-11 as compared with 1902-3	18,582,439 00

It must be apparent to any one that, in order to determine the value of our export dairy trade as at present constituted, we must now consider several products in addition to butter and cheese. You might ask me how I arrive at the figure of twenty-five million, as the increase in the annual consumption of milk and its products since 1903. That, of course, is only an estimate; I have not been able to get any exact figures, but I have calculated it from a good many points of view and I am satisfied that the per capita consumption of milk, butter, ice cream, etc., is at least ten dollars per capita in this country. If we take the increased population since 1902-03 and multiply that by ten, it amounts to not less than $25,000,000. Our home consumption is growing every year at the rate of over two million dollars, and if it had not been for this increase of production, our export trade would be wiped out entirely; and it will be wiped out entirely in the next ten years if we do not increase our production to that extent. I have no expectations that that will be the result; because I know there is a large increase in the production every year.

But I am not sure that we are doing as well as we should. I think our increase should have been more than $18,000,000 in these ten years. The increased production this year should have been more than $18,000,000 over what it was in 1902-3. I secured some figures during the last few days that I would like to lay before this meeting; because I think it is a matter which should be of vital interest to every dairyman in Eastern Ontario.

I attended the convention of the Western Dairymen's Association in Stratford last week and the Secretary of the Association, who is also the Chief Instructor for that territory, presented these figures to the Association. The average production of the milk of the 8,137 cows supplying milk to seventeen cheese factories, from the first of May to the first of November, 1910, was 4,006 pounds. That can be taken as the average of the milk supply at cheese factories for six months in Western Ontario and it is very satisfactory, because it is much higher than it was a few years ago. Mr. Publow, chief instructor in Eastern Ontario, presented the same kind of figures to the convention at Perth the other day and he showed that the average production per cow, for the same period, in Eastern Ontario was 3,253 pounds, or 753 pounds less per cow than was produced by cows in Western Ontario. That is a very big sum when you come to multiply it by five hundred thousand cows that there are in Eastern Ontario. It would amount to more than $3,000,000 a year. If the cows of Eastern Ontario had produced as much on the average as the cows in these seventeen factories in Western Ontario, the farmers of Eastern Ontario would have had $3,000,000 more in their pockets as a result of the season's operations. You cannot get away from these figures. They are accurate returns taken from the cheese factories and creameries, and it is a rather startling contrast. I think the farmers of Eastern Ontario should consider this matter very carefully. It is because of this difference that I say I am not very sure if you are doing quite as well as you should do. I do not consider 4,000 pounds per cow a large yield. That could be improved and should be.

Why should there be this difference? I confess that I do not understand it very well, and I know the country and know the people both east and west. Probably I am as well acquainted throughout the different sections of Ontario as any

one, and I do not quite see how it is. But I know a difference does exist, because I have other figures which show the same thing. The average production of milk in Eastern Ontario is certainly not as good as in Western Ontario. The season may be slightly shorter here than it is in Oxford County, but there is not very much difference; and there are many milk producers who will tell you they can produce more milk by feeding their cows than they can by pasturing them.

The farmers of Eastern Ontario depend more solely on dairying than the farmers in Western Ontario do. They have other lines in Western Ontario which they engage in more extensively than the farmers in Eastern Ontario so that it becomes more nearly the sole dependence of the farmers in Eastern Ontario than it is in the West. I do not want you to think I am scolding or finding fault, but it seems to me that the farmers in Eastern Ontario can hardly be studying their business as carefully as the farmers in Western Ontario. I will tell you one reason why I think so. The number of cows in Ontario are fairly evenly divided between the east and the west. You are all familiar with the work which the Dairy Branch of the Department of Agriculture has been carrying on during the past five years to encourage a study of the production of the individual cows in the herds. We have given as much attention to that work in Eastern Ontario as we have in Western Ontario; in fact I think we have had more meetings to promote cow testing in Eastern Ontario than in the West, and yet I find these results: That the total number of tests made in Western Ontario for the past year was 21,669 and the total number of tests made in Eastern Ontario was only 6,158, less than one third, and that is why I say that it seems to me that the farmers in Eastern Ontario are not studying their business as carefully as the farmers in Western Ontario. I hope you will pardon me for making this comparison, it is not said in any disparaging way. While these are the total number of tests made, the total number of cows under record in Eastern Ontario was 1,122 and in Western Ontario was 3,549. There are more cows under record in the Province of Quebec than there are in the whole of Ontario, although the number of cows in that Province is less than it is in Ontario.

Professor Dean was advertised to speak on the question of "Paying by Test at the Cheese Factory." I do not propose to go into that at any length; but I think I can speak on the subject; because I have had a great deal of experience with the work.

I think I operated the first Babcock milk-tester that was brought into Canada, and we carried on considerable experimental work in 1901 and 1902 to determine the value of milk with different percentages of fat for cheese making purposes, and as a result of the agitation that was started at that time a large number of cheese factories adopted the plan of paying according to the percentage of fat in the individual patron's milk. We were just a little ahead of the times. Many of the men who undertook to do the testing were not qualified to do it, and we had not the facilities for instructing them; but conditions are different to-day, and there is no lack of opportunities for cheese makers and others to become thoroughly competent to test milk and have the milk sent to the cheese factories paid for on that basis.

A difficulty has arisen over this matter, not as to whether it is right to pay by test or not; but over the method of calculating the results of the test; and different plans have been suggested, so that it might appear to those who are not conversant with the subject that there was a difference of opinion as to whether the test was accurate or not. I hope that the officers in my branch will be able to do some work during this coming summer along these lines which will help to make

this thing clearer and so as to bring about a more satisfactory operation of the test system. I want to impress upon the minds of the dairymen here that there is a great need for giving some attention to this matter. We find from our cow-testing records that we are getting some very low tests, many under three per cent. There are others running up to four per cent. and over, and milk that tests four per cent. makes more cheese than milk testing only three per cent. and there is a great injustice to the man who is furnishing the rich milk. The average percentage of fat in the milk furnished to cheese factories in Ontario is decreasing, and that is not a good thing for our dairy business, and it should not be so, because you can increase the average yield of milk and increase the percentage of the fat at the same time.

The average per cent of the fat in the milk fifteen years ago was about 3.6, and I find to-day that the average is not over 3.49. Under the pooling system we pay as much for one hundred pounds of poor milk as we do for one hundred pounds of rich milk, and that is not the best way to increase the percentage of fat in the milk.

I am very glad to have had this opportunity of saying a few words. I think it is worth while to make an attempt to impress upon the dairymen of Eastern Ontario the fact that they are losing so much in the production of milk compared to what they might have by paying a little more attention to the business. If the dairymen of Western Ontario can produce an average of four thousand pounds per cow in six months, the dairymen of Eastern Ontario can do it, and there is no reason why it should not be done. I do not mention four thousand pounds per cow as a standard. It is only fair. There is no reason why we should not go a great deal higher than that. Let me conclude with this illustration: suppose that it costs you $30 in feed and other expenses to produce thirty-five hundred pounds of milk at $1 per hundred pounds, there is five dollars profit on it. If you increase the average production by five hundred pounds you have double the profit, and you will make as much profit from ten cows as you are now making from twenty. You do not have to double the production of the cows to double the profit. You have only to increase it very little to double the profit.

CLASSIFICATION OF HORSES AT SHOWS.

Wm. Smith, President Ontario Horse Breeders' Association, Columbus.

I do not intend to detain you very long, because we are behind time and there are some interesting addresses to come. Another reason why I do not wish to detain you is that the subject was fully discussed by Mr. Bright and Mr. John Gardhouse at Guelph about six weeks ago.

The classification of horses at shows has worried the managers and conductors of these shows for many years, and I do not know but what it is just as worrying to-day as it ever was. I may say at the outset, that I intend to confine my remarks to the heavier breeds; because the lighter ones are out of my line. First, we have the imported horse, and upon that question there should not be any difficulty. Next we have the horses that are recorded and bred in Canada; and then we have those that are not recorded—all good individuals, generally known as the agricultural horse and the general purpose horse.

I have done very little judging, but I have been a fairly close observer, and one of the great difficulties is in connection with the agricultural and general purpose

horse. As I understand the agricultural horse, it is a small draught horse, and the general purpose horse is one that could be used under the saddle, in the plow, in the carriage and almost any place that you can think of.

I quite realize the fact that exhibitors will have some difficulty in choosing, but I think there should be a good deal of difference between the small draught horse and the general purpose. I am not going to say that the general purpose horse is the best and the most valuable horse to breed, but I am going to say that in connection with the older sections of the Province, where breeding has been going on for the last forty or fifty years, we should look back with some degree of pride at the work that has been done and to the future with a great deal of hopefulness. In my view, for a number of years to come, there should be the general purpose horse in certain shows in this Province, but I would not for a moment think of showing a stallion in the general purpose class. We should aim at using pure-bred stallions and in the general purpose class, I would only have fillies or mares and geldings. I think you can quite catch my point, that in certain sections of our Province for many years to come we should have the general purpose class confined wholly to mares, fillies and geldings. There should be no trouble in the minds of any, if there is a general purpose class, in deciding what animals should be shown.

The question might be raised will you have horses of an agricultural class at the same show? In some sections of Ontario, I would say unhesitatingly, "Yes, small draught horses." There is a considerable field of usefulness for that class of horses, and especially at the prices they are bringing to-day.

Horses that are recorded, I am inclined to think, should be put up against imported animals. I will tell you why I would do it in connection with the Prize List. I would spend a little more money, and I would do it with this object that you would encourage the Canadian breeder who has to go up against the imported animal, and even if he had to take a little of the worst of it in the Show Ring he would have his name in the papers as winning third or fourth prize.

I think there should be at least four prizes if you are going to show imported and Canadian horses together. Of course, in many sections there might not be any imported animals; but I would be liberal in the prize list, even if you have to shorten up in some other directions. In the older sections, for instance in the County of Ontario from which I came, we have already nearly arrived at the day and time when a general purpose animal might be left out, and then you could have the Agriculture and the Canadian Draught, and in these classes I would be liberal with geldings, as many of these are worth anywhere from $200 to $300.

I should explain that I am not making my remarks applicable to Shows such as are being held in Ottawa, Toronto, and London, and places of that kind. I am more particularly referring to our County, Township and District Shows, because I think that is where the difficulty occurs. One of the reasons why this question is put up for discussion is that exhibitors have had difficulty in deciding where they should put their animals, and the judges have had just as much difficulty in deciding what they should do, and I have been interested in watching the judges, because what they do to-day is often undone to-morrow; and we should lay down some well defined rule as to what a general purpose horse is. I think I have made that plain to you, and I think I have made it plain what I consider an agricultural horse is, that it is a small draught horse. If that be the case, the judges who are sent out to these Shows should have little or no difficulty in knowing what to do. I know it is difficult for a man who has been judging imported animals to get his ideas down, but he has got to come to it. I was judging at

Port Hope last fall, and there were a couple of imported fillies in the agriculture class. I went to the gentleman who was showing them, and I said, "Surely you must have lost your senses when you put an imported filly in the agricultural class," and he said, "I did not, that is just what they are." "All right," I said, "I am going to give you first prize; but I am going to tell you never to repeat it, because I think you should know better." A man who puts his money in an imported mare should make her win her way in the very best heavy draught class, and not in the agricultural class. You must remember that the local circumstances, wherever you are situated, must have some weight in deciding what you shall do; as to whether you shall have a general purpose class or whether you will throw them out and have the agricultural class. These are things that you must consider, and use your best judgment as to what should be done.

WHY NOT THE SAME BUSINESS PRINCIPLES APPLIED TO HORSE BREEDING AS TO DAIRYING?

M. Cumming, Principal College of Agriculture, Truro, N.S.

If prices count for anything, the horse is king to-day. Despite steam, electricity, the motor, and other forms of mechanical traction, horses are more difficult to procure and higher priced than ever before. At this very Show we know of several who are "on the look-out" for good pairs of horses, and more especially the "heavy ones," and so far we have heard of no offers. The speaker himself has been making inquiries for a pair of heavy geldings, and even the offer of a liberal price has brought no response. There are horses for sale, but they are not the kind the market wants. In desperation, a man may buy what he does not want, but he will not pay the figure he would have could he have obtained what he was seeking for. Now, why this condition of affairs? Why can't buyers in the country, at the market, or at this Fair, get what they want? They have the cash and they want the goods. Why can't the farmer produce the goods and get the money? Are farmers applying, as well as they might, business principles to horse raising?

This is the day when breeders of dairy cattle are endeavoring to apply the same business methods to their employment as the men behind the counters do their vocation. These dairymen say you should weigh the milk and the feed, and ascertain the other items of expense and so know what they are doing. By applying such business methods, men are making money out of dairying. The same principles should be applied to horse breeding.

Too many farmers, in breeding horses, consider solely their own ideals. They are not studying what the market will pay the price for. As a result, they are not making the money they might out of horse breeding. In the compass of a short speech one must be definite, and, since the writer is one of the judges of heavy horses at this Show, he will confine himself in his remarks to that class of stock.

The market will pay to-day anywhere from $400 to $700 or even more for a good pair of draft geldings or mares weighing 1,500 pounds or over. For ordinary chunks, weighing 200 or 300 pounds less than this, the price will be little more than half of the above figures. There are far more of the latter class of horses offered for sale than the former, and this is why the farm is not realizing as much from horse breeding as it should. Why this condition of affairs? Barring some

of the more forward counties of Ontario and of the other parts of Canada, stallions calculated to get the "rent paying" sort of stock are not sufficiently appreciated. Farmers say they are too heavy for our work. We want a general purpose horse, a horse weighing about 1,300 pounds, that will get for us "all-round horses." Now stallions of this class are usually either under-sized draft stallions, over-gross Standard-bred or Thoroughbred, or Hackney stallions, or all too frequently grade or cross-bred stallions. None of these sorts are likely to be prepotent. And what is the result? Perhaps a useful horse—perhaps not. But in any case, if the owner wants to sell, and he usually does at some time, the price is low, and no money is made from this part of the farm operations. It pays every time to study the market and to breed to that class of stallions best calculated to get what the markets will pay for.

In the application of business principles to dairying, nothing has been more clearly demonstrated than the indispensableness of the special dairy breeds. The dairyman who seeks to make money out of milk or butter or cream by dependence on general purpose sires fails. So with the horse business. There is not to-day a prepotent general purpose breed of horses. There are stallions, some of them pure-bred, more of them grades or scrubs, that in weight and other particulars may fill the general purpose bill, but experience has taught that when these are used as sires they will fail to get anything like a large per cent. of commercial stock. We believe that nothing has stood so much in the way of horse improvement in Canada as this general purpose ideal. A general purpose horse, if you can get him, is a very valuable animal, but when, with the breeds at present available, you try to breed this sort of a horse, you court failure nine times out of ten. Those countries of the world where buyers are to-day going to secure high-class horses, are invariably countries where special purpose horses are bred. Consider the Clydesdale of Scotland, the Thoroughbred of England, the Percheron of France, the Standard Bred of America. No general purpose ideal controlled the makers of these breeds. They have bred along special purpose lines, and to-day they are reaping their harvest.

Business principles applied to dairying have directed more than ever before the attention of breeders to the importance of their females. Perhaps, in all lines of stock raising, the tendency has been to overestimate the importance of the male. Those men who to-day have high-class dairy herds that are making money for them have weeded out the poor and have most carefully retained their best females. Even high prices would not tempt them to part with this class of their stock, without which improvement could not be affected. As a buyer of horses in Scotland and other parts of the world, I have found that the great horse breeders of the world are equally jealous of their high-class mares. You can buy poor, or even ordinary, mares in these countries at reasonable prices, but when it comes to a high-class mare that has proved herself, the price is multiplied many times. In Canada it has, unfortunately for our horse business, transpired that farmers have parted with their mares almost as readily as with their geldings. This has not invariably been the case, for our successful horse breeders have been equally careful to retain their good brood mares. In this connection, the feature that has most impressed the judges of heavy horses at this Show is the strength of the filly and mare classes. We have seen shows at Toronto and elsewhere where the stallions were almost, if not quite, as good as one would see anywhere in the world, but it has been most unfortunate that the female classes have been decidedly inferior, both in quality and numbers. Canada can never hope to become a great horse breeding country unless this condition of affairs improves; that is, unless farmers

refuse to sell their high-class mares (except at most tempting prices), and unless importers get more encouragement to bring out mares as well as stallions.

Business principles applied to dairying have led to a large development of winter dairying in Canada. At this season of the year farmers are able to give more attention to their stock and to realize proportionately better results. We believe that more could be accomplished along this line in horse breeding. The average farmer is often deterred from raising colts because it interferes so much with his summer's work. Of course, he may carry an extra horse or two, but this involves extra labor and expense. The raising of fall colts would often help to solve this problem. On our own farm we keep a few brood mares, and we usually plan to have some foals dropped in the spring and others in the fall. Our fall foaling mares are always available for the rush of spring and summer work, and they pay for themselves in winter time by the foals they raise. A fall foal will not be as large the following December as will his four or five months older spring brother, but there will not be as much difference as you might think. We have on our farm a light-weight draft mare that was foaled in the spring seven years ago. She weighed as a yearling, in the latter part of the fall, 1,200 pounds. A year ago last September she had a foal that is now sixteen months of age, and he weighed at the latter part of the fall 1,160 pounds, *i.e.*, within a very few pounds of the weight of his dam at the same time. So far as breeding is concerned, the advantage in weight should have been in favor of the dam. This fall-raised colt was well cared for during the winter, *i.e.*, his dam received good clover hay and sufficient oats and bran to keep her in good condition. She was fed besides a few roots every day. The colt gradually learned to eat his share of these foods. The mare was kept with her colt in a box stall, the door of which opened into a large yard, and there was scarcely a day in the winter, no matter how cold, but when the pair ran out and enjoyed fresh air and exercise. The colt was weaned early in the spring, and his dam was in good shape to do the hard spring work. The colt was in the very best condition to make use of summer pastures, and the result is that he is just as good and almost as big as his spring foaled mates. We have mentioned this instance to encourage farmers who otherwise might not raise horses to now and then try to raise a fall foal. Of course, the great majority of foals will continue to be spring and early summer ones. This seems to be the natural season, and there is no doubt that a larger percentage of foals can be had at this time than in the fall. Nevertheless, the advantages of the fall foal, especially from the standpoint of arrangement of work on the farm, are many, and we think there should be a larger percentage of these fall foals raised.

And does this horse raising business pay? Yes, if you raise the kind of horse the market wants. We estimate that it costs us from $100 to $125, counting in risk and everything, to raise a draft colt up to two years of age. After that time, he can be broken to harness and will pay for himself until he reaches the market age. A few years ago this market age was five, six or even seven years, but at present horses are so scarce that four-year-olds, and even three-year-olds, if up to size, will sell at from $400 to $500 per pair, and, if of extra quality, considerably higher. This is certainly a splendid return and shows that horse-raising can, even under ordinary conditions, be made just as profitable as any other line of farm business. The real horseman, who understands the business and likes horses, can make, under present conditions, more money in horse-raising than in, perhaps, any other line of farming. The average farmer, if he applies business principles to this industry, can add some hundreds of dollars every year to the income from his farm.

STORAGE AND FEEDING ROOTS.

J. H. Grisdale, Director, Dominion Experimental Farms, Ottawa.

I have been very pleased to note the deep interest you have been taking in the address of my friend Mr. McMillan.

I want to make two or three remarks with reference to Mr. McMillan's comments with regard to handling roots—remarks which are probably very *apropos* here for the reason that our conditions differ from those which maintain in the Western part of the Province. In the first place, he recommended sowing nearly four or five pounds of seed. I believe that under the average conditions in this Eastern part of Ontario you will find it to your advantage to sow seven or eight pounds of seed. In the second place, he said he found it to his advantage to grow white sugar mangels. In this district, we find that the mangel, called the mammoth or gate-post, is the most advantageous to grow. It gives a larger crop than any other variety and it is more acceptable and higher in feeding value than other varieties, with the exception of sugar beets.

Q.—Why a difference in the amount of seed sown per acre?

A.—Because we get a very much better stand. If we sow only four or five pounds per acre, whether on the flat or ridges, we find breaks to fill up. It is much more economical and profitable to thin out a few mangels than to try to transplant or re-plant later on in the season.

My remarks are to be confined almost entirely to the storage and feeding. I want to emphasize the point of getting the mangels as clean as possible and of getting them into the root house when cool. Roots coming into the root-house warm usually keep badly; but roots housed when cool almost invariably keep well. It is important, further, to ventilate the root house. Especially is this the case if you have a low lying warm root house, where the walls are for the most part underground. Under such conditions, it is essential to have some method of introducing air into the lower layers of roots and letting it work up and go out through the top. You may have holes in the sides of the walls to allow of warm air escaping, or have pipes leading up through the roof. You do not want the warm air to escape too rapidly or the cold air to enter too freely.

In the East, we find we can do as well, if not better, with turnips than we can with the mangels. That is the case at the Experimental Farm, and, judging by the popularity of the turnip in this district, I think it is the case all the way through the East. It gives a higher yield than the mangel. However, it does not keep quite as well as the mangel, and it requires a little more attention in storing. You want to be careful and keep it as cool as possible. If the turnips freeze a bit on the surface there is no harm done. Turnips are quite acceptable to almost all classes of live stock, especially to sheep, cows or steers and swine.

Q.—Do you object to putting them in the bin frozen?

A.—Yes, if the temperature in your root house is likely to go at all high.

Q.—What way would you fix it, so that the air would penetrate through them?

A.—I would make a shaft about a foot in diameter, that is, make a box of boards and run it along the bottom of the root house. Two-inch holes should be bored as closely together as possible along each side of this shaft or tube to allow the air to escape among the surrounding roots. Fresh air should be admitted to this box through an extension of the same running to the outside of the root house at some point preferably near the ceiling.

Roots vary as to keeping qualities. Some are good keepers and others bad. The roots most difficult to keep are carrots. It is very difficult to keep them right. They must be put in clean and dry and kept in a cool place, or they will be gone before half the season is over. Turnips are the next most difficult to keep, and the same suggestion applies to them; keep them clean and dry and allow a free circulation of air. Mangels and sugar mangels are good keepers, and require but little attention. It is very seldom that rot gets into mangels, and I have never yet seen sugar beets much affected by rot, even if kept until June or July. Even though no root house be available wherein to keep them, that should not prevent one from growing them and keeping them just the same. One can make a pit in the side of a hill and keep one's roots in first class condition right up until March or April. Roots in good condition in the spring are of wonderful value for breeding stock. The animals like them exceedingly well.

Storing roots in pits is very cheaply done. The material required is a layer of straw on the top and five or six inches of soil over that with tufts of straw sticking up at intervals of five or six feet to allow for the escape of gas.

There is scarcely a variety of roots that cannot be fed to advantage to any class of stock. While one may have ensilage and the best of clover hay, first-class straw and excellent meal, still the addition of a few roots will make itself felt at once, and when they can be grown so cheaply I think all will admit it would be to our advantage to grow them, if only on a small scale, on every farm.

We find that we can grow roots on the Experimental Farm and put them in the root house for from $2 to $2.50 a ton, and our crops are nothing extraordinary. On the Central Experimental Farm the soil is not very suitable for root growing, but the average crop is somewhere around 25 tons per acre or from 750 to 850 bushels per acre, still we can put them in our root house at the cost per ton mentioned.

Now, if you compare the feeding value of a ton of roots with the feeding value of the amount of any other class that can be bought or produced for the cost of the ton of roots, it will be found that the cost per unit of food is quite low in the case of roots as compared with other feeds. Of course I do not suggest that they be made the main forage crop on the average farm in Eastern Ontario, but I do urge that they be much more extensively grown. Every class of live stock grown or bred on the farm will be benefited by the use, to a greater or less extent, of some sort of roots.

There is no class of animal that seems to be so much benefited by the addition of a small amount of roots to his ration as the horse. It keeps his hair in condition and he seems to make better use of his other food. We have tried experiment after experiment and we find every time that while mangels and sugar mangels and turnips will be taken with more or less pleasure by the horse, the carrot is most acceptable.

When it comes to the cow or steer, there is no class of animals that welcome so keenly the addition of a small amount of roots to their feed. The value of roots to a cow can scarcely be estimated. When one remembers that about 90 per cent. of the root is water, leaving only ten pounds in one hundred of dry matter, as against 90 pounds water, one might say, it was a rather expensive way of watering cattle. That ten pounds of dry matter or feed seems, however, to have a most beneficial effect on the animal, whether for milk production or beef production. The addition of roots to the ration diminishes the quantity of meal necessary, a most important point in this section where we do not raise enough grain for our

own requirements. If one can substitute roots for meal and produce 100 lbs. of that substitute for about half the cost of one hundred pounds of grain, there would surely seem to be a strong argument for using roots. From eight to ten pounds of roots are worth a pound of average meal mixture. Then, again, roots have a marked effect upon the health of animals. Any animal suffering from indigestion or almost any malady will be helped by the addition of roots. I know of no other material that will so surely help the cow to readily digest such large quantities of highly concentrated foods as will a small amount of roots added to the ration. Cows producing, as were these cows yesterday and the day before, from 60 to 85 pounds of milk a day, must necessarily be under a tremendous strain; all the digestive organs are working to the limit; and depriving of such cows of roots under such conditions would most certainly lower very materially the milk flow.

As we all know, a mixture of turnips and oat straw makes right good beef at a low price, and while one does not want to limit his cattle to turnips and oat straw, still they will make very cheap gains if fed on the ration described. The addition of hay and meal helps the thing along.

The home of the sheep in Europe is most certainly the British Isles. No farmer there thinks of trying to farm without roots. The domesticated sheep developed and improved on such farms seems to have developed or acquired a wonderful liking for roots of all kinds. The root that seems to suit the sheep best is the turnip, probably because they grow best in Scotland, the home of the best mutton sheep, and where they seem to be able to grow tremendous crops of this sort of root. I have seen as high as 45 to 50 tons to the acre growing in Southern Scotland; hence in that country they constitute the cheapest part of the ration.

In Eastern Ontario, we are very much interested in the pig growing industry, and if there is one class of live stock which will show better profits than another for feeding roots, it is the pig. At the Experimental Farm, we feed a ration, of which roots constitute the most bulky part, and by far the least expensive part, and it has given us the best results both for breeding stock and for fattening pigs. It is a ration of which at least 4-5 by weight is roots and the rest a mixture of bran and shorts. We winter our sows outside, and they live upon a mixture of pulped roots with one to two pounds a day of the above meal mixture. The use of roots in pork production enables us to cut off at least one-third of what would otherwise be the cost of producing one hundred pounds of pork. The kind of roots you grow for pork production is immaterial, you can grow sugar mangels, sugar beets and common mangels, turnips or carrots; they will all be found acceptable to all classes of swine. Probably for the average farmer the most suitable roots to grow would be mangels and 1-5th turnips. If feeding mangels, the best method is to feed them whole or pulped. In feeding small pigs, a bit of root thrown in whole seems to attract their attention. There is always more or less soil on them and they enjoy nibbling at the root and getting some soil along with it. It seems to help to keep them in good shape. Roots are a most excellent corrective for all digestive troubles.

Q.—Did you find any trouble in the horses digesting the tops of the carrots?

A.—I have not noticed.

Q.—What effect have the turnips on the milk?

A.—If you are making butter or selling milk, it is dangerous food; if you are using it at home, you might become accustomed to it.

Q.—For the best results in feeding steers, do you pulp your turnips and chop your oat straw?

A.—Yes, I would pulp the turnips and mix the straw with them and give the meal on that. If you are feeding them loose you will find it an advantage to pulp the turnips for the reason that they will otherwise get a turnip in their mouth and go away and lose part of it.

Q.—Do you feed turnips to the hogs that you have outside in the cold weather?

A.—Yes, if you have a chance come down and look at them. We have about fifty. There are many things you can learn by going out and having a look at our Experimental Farm, and it would pay you to get our literature. Just send in your name and say, "Please put my name on your mailing list," and you will get them until you wish to quit.

FEEDING AND SELLING POULTRY.

F. C. Elford, Manager, Poultry Department, Macdonald College, Que.

Some person has intimated, I do not know how true it is, that last year there were produced about fifty million chickens for eating purposes. We have heard a good deal about feeding poultry. It is an old subject, and you might possibly think you know all there is to know about it; probably you do.

I have two specimens of chickens here, which I want to use as an illustration this afternoon. Here is a bird that weighs four pounds. It is an ordinary barn yard chicken that is put on the market without any special feeding, without any special care. You will notice it is not a very appetizing looking specimen; still it weighs four pounds. We will say it has cost the producer seven cents a pound to rear that chicken. As it is, it has cost the farmer 28 cents and he sells it for 10 cents a pound, which is a fair price for a chicken of that quality. He gets 40 cents for it, and that means he has made 12 cents on the transaction. If he would keep it a little longer, or until it is in the condition of this one, he would make more. He could do that by putting it in a crate and fleshing it up properly. Three or four weeks will do it, and the bird will put on two pounds of flesh. These two pounds will cost the farmer say seven cents a pound, the same as the other four pounds, the chicken now has cost him 42 cents for the six pounds. There are the two chickens. One represents a bird sold in the unfinished stage, costing the farmer 28 cents, and which he sells for 40 cents, thereby making 12 cents. Here is a bird that has been finished off properly and weighs six pounds, costing 42 cents, and he sells it for 15 cents a pound, a very conservative price for a bird of this kind, that means 90 cents. The six pounds have cost him 42 cents and he sells it for 90 cents. He makes a gain of 48 cents, or, in other words, he makes 36 cents. more on the finished chicken than he does on the unfinished.

If there are fifty million chickens put on the market every year you can easily count up what it means to the country. It means just eighteen millions more money to Canada if the farmers would feed their poultry and finish them off properly.

Now, we will go a little further. These two chickens are lying on the retail dealer's counter, and I come in to buy. We will say there is 20 cents additional price put upon these two birds for commission and for one thing and another. That means that his 40 cent chicken will cost me 60 cents and his 90 cent chicken will cost me $1.10. Which would it pay me to buy? If you look at these two birds you

will find that the bone is about the same size, the heads are the same size, and no doubt the offal all the way through is the same. That is to say there is as much offal in this thin chicken as in this fleshier one. There is, roughly speaking, about two pounds of offal in each bird. That means we pay 60 cents for this chicken, or 60 cents for two pounds of eatable meat, it costs us 30 cents a pound. In this other one we get four pounds of eatable meat for $1.10 or 27½ cents, so that we are paying 2½ cents more for a pound for this chicken than we are for the better one. Therefore, from a consumer's standpoint, it is cheaper to buy the better quality of chicken; say nothing about the superior quality of the one bird over the other. If it is only just filling up material you want, it will pay better to buy the good bird. We all know that the quality of the two birds can hardly be compared. There is just as much difference in eating this good one compared with the other as there is in eating the best cut of beef and the poorest cut of beef. Those of you who have eaten well-fleshed chicken will never think of eating an under-fleshed one, and I want to impress upon you the great necessity of finishing your birds in a proper way. Put the finishing touches on whatever you do, no matter what it is; because it is the finishing touches that pay. It is the same with eggs, dressed poultry, packing apples or any kind of fruit. Whatever you do in the farming line is worth doing well, and you can get a much better profit on anything that is set before the public in an appetizing, neat, and attractive manner. We cannot afford, as poultry producers, to be putting these poor, scrawny looking birds on the market. It would mean a great deal of money in our pockets and it would give better satisfaction to the consumer and the demand would be greatly increased.

ADDRESS.

M. Cumming, Principal College of Agriculture, Truro, N.S.

I appreciate very much, coming as I do from the Eastern part of Canada, the opportunity which you, the farmers of Ontario, have given me of meeting you to-night and of seeing the magnificent collection of live stock which you have brought to this Exhibition. This Province is recognized to be the nursery of live stock for the whole Dominion of Canada and for a large part of the continent of America; and from its position, its climate, the advanced state of agriculture attained, and the character of its people, one feels certain that it will always continue to occupy its present foremost position as the home of high-class live stock in America.

There is a lure about live stock. It is the lure that brings one like myself from the Atlantic, and others from the Pacific, to some common centre, where the best of our country's live stock is gathered together, and where we can feast upon the excellencies of these animals to our hearts' content. I feel sorry for the man or the woman who has not learned something of the lure that attaches itself to live stock. Those of you who live in the city may, perhaps, have friends, devotees of the horse, the dog, or poultry, who, through their common interests in these animals of God's creation, meet together and talk them over until you wonder how anything more could be said. You have seen in them something of this lure. Mayhap you have been one of the number, before the blazing fire, who have talked of the old time trots, and of this year's "green one" that can step so fast that the competitors seem like statues. What races the public would see if the judges'

watches would only record those miles fought out in dreams and talk before the blazing log. But never mind that; if you have been one of this circle, you know something of this lure.

Nor does this lure confine itself to these steeds that, by their speed, make one's blood tingle and one's excitement rise to the highest pitch. There is the same attraction centreing about these cattle, these sheep, these poultry, these swine, that you have seen at this Exhibition, whose excellency of form and whose performance leads one to admire, to envy, and to discuss just as interestedly and just as luringly as the speed of the horse. It is written of Scotland's premier breeder of live stock, a man seemingly unimpressible, without sentiment, slow and deliberate of thought, that, when he saw a certain bull of rare excellence of form, he became so excited that he could not even sign his name. I heard a group of men last night talking about a certain animal now at this Exhibition, and saying, "I wonder what chance it has of going to Chicago and becoming the champion of America?" One who knows nothing of the lure of live stock would fail to understand how so much could be said and how much thought of this animal that many would pass by with only a single glance. It is all the lure of live stock, and there is the same lure about the fellowship of the men who are engaged in breeding live stock. They are the best lot of fellows it has ever been my privilege to meet, and it is a rare pleasure for one who is living quite a distance from this centre of live stock breeding, to come to an Exhibition like this and meet so many men who are engaged in improving the live stock of our country, and to talk with them about the improvements they are making, and the victories they have won and the losses they have sustained. It is the lure of live stock that leads these men to devote so much of their time to the establishing and carrying on exhibitions of this sort. Those who are not in touch with this have no idea of the time and energy that is spent in order to provide one of these shows which you can visit and enjoy to your hearts' content.

I would like, in the very few moments that I have at my disposal, to pay a tribute to the live stock men of Canada, who I believe are doing more than any other people in this Dominion *to conserve our national wealth*. The people are talking about conservation at the present time. We are talking of conserving our forests and water power and coal and minerals, and we are talking of conserving, what is more important than all these, our agricultural resources—the food supply of the people who live in this country. Every farmer here thoroughly appreciates the fact that there is no better means of conserving the fertility of his farm than through the medium of live stock. Those of you who live in the city do not realize as do these practical men of the farm what live stock, and particularly improved live stock, means to the agriculture of this country, upon which we all are directly or indirectly depending for sustenance.

It is an old story, and well known, that the farmers who try to make a living off their farms without doing it through the medium of live stock, unless it be under special circumstances, almost invariably run out their farms. I do not know whether you often have an opportunity of reading the articles of that railway magnate and sometime philosopher, a Canadian by birth but now operating in the United States—James J. Hill. A year ago last New Year's he contributed an article to one of the leading agricultural papers of America, in which he contrasted the development of two farms, side by side. On one of these farms the proprietor determined to make his livelihood through the medium of live stock, and on the other the proprietor determined to make his livelihood by selling hay and grain and other products of the farm and to keep just as little live stock as he could get

on with. Mr. Hill said he knew these farms thirty years ago, when they were equally fertile and productive. In his article he stated that during the first few years the man who determined to do with as little live stock as possible, while he did not produce any more actual material from the farm, yet he got a little larger net income, because his working expenses were less; but the man who made it his business to sell off his farm beef and butter and hogs and horses and poultry, although his immediate expenses were somewhat larger because he had to construct better buildings and employ more labor, yet that man, in the course of thirty years, had the satisfaction of seeing his lands gradually become more and more fertile until now, after the lapse of thirty years, it is a more productive farm than it was when first cleared; whereas the farm occupied by the man who did not care for live stock had become less and less productive until now the farmer can take no real pride in it and derive very little income from it, and would have to try and get a better farm. Mr. Hill contrasted the two men. The one man, through the medium of live stock, had constructed something permanent, and was leaving to the next generation a farm that was more valuable than when he got it. He not only gained a livelihood for himself, but one in which he took real pride, and he was passing down to posterity something better than what he had received from Providence, and that is something of which any man might feel proud. The other had used his gift of land to supply his needs from day to day. He had not built for the future, and when he would pass away no such enduring monument as that which his neighbor had built up would remain to show that the world had been the better because he had lived in it.

Those of you who have travelled or read, and who know the countries of the world from which we try to derive some lessons, cannot but be struck with the tremendous number of live stock that they keep on comparatively small areas. Our lecturers are forever talking of the wonderful things that are done in that little Kingdom of Denmark. How have they achieved such wonderful success? Because during the last forty years, through the medium of the dairy cow and the hog, they have built up in that little kingdom one of the most productive pieces of country that we have anywhere in the world, and it is a country from which we can all learn a lesson with regard to how to make agriculture pay. Those of you who have had an opportunity to take a trip through agricultural England or Scotland, if you did nothing more than look out of the windows of the car, could not have but noticed how much more live stock they keep on these farms than we do on our farms. Why, as you go through Scotland, you not only notice the cattle but you see fields everywhere dotted with horses and sheep, and that is what makes it possible for England to-day to produce more wheat per acre and more oats, and many other crops, than we can even in our great fertile West. There is no part of that country that would interest you more than that rather exposed bleak and barren part of the north of Scotland, the County of Aberdeen. One hundred years ago it was known for little more than its fish and granite, and was scarcely thought of as a high-class agricultural country; but the wonderful things that have been done by the live stock men on that naturally bleak shore almost sound like a fairy tale. They have built up some of the most fertile farms you can find anywhere, and they are well worth while going to see. As you go through that country you find that every man is a lover of live stock. No matter where you go you can get together a coterie who will sit together and talk of the wonderful animals bred by this man and the other, and these people enjoy breeding live stock. A certain Scotch farmer in that country was one day on his way to church. His face gave every evidence of sorrow. He was one of that dour, hard, unapproachable type of

Scotchmen who usually keep their sorrow to themselves, and with whom it is exceedingly difficult to sympathize. The neighbors noticed his countenance, and one of them, a little more curious than the others, went up to Sandy, and he said, "Sandy, you are looking awful sorrowful this morning; what has happened, have you lost your wife?" "A' mon," said Sandy, "it is worse than that, I have lost my very best coo. If I had lost my wife I could hae got anither ane; but I will never get a coo like you." There is a humorous side to that, but there is just a little bit of truth in that statement. They do love their live stock. I have often heard our live stock men say, "I wish I could get in Canada a man to take charge of my horses or cattle, or whatever it may be, who is really fond of them." Down in our country they often say, "I wish I could get some of these old country fellows, a man that has been brought up among live stock, and who has got an appreciation and a love for live stock; that love which leads to success." We have not got it as much as we should have in this country. We need to get more of that spirit, and if these shows which are held in the Dominion can do anything to contribute towards that love for live stock, and that will make our young men grow up with the idea that live stock is not merely so many head of animals to be cared for, but something to be admired and to take an interest in, then these shows will have contributed to our Dominion something that will mean for permanent prosperity. I would like to believe that as the time goes by we will become more and more interested in live stock. I am glad to see our Dominion Department of Agriculture encouraging the testing of dairy cows. Out at the door there is a table, and behind it is a sign, upon which are these words, "Are you testing your cows?" And on the table they have everything to show the farmers how to test their cows. Some of you who have not given that any attention may think it is so much more work, but there are men in my hearing who have experienced the satisfaction that has come by testing cows, and by finding out that by better feeding and selecting they are continually increasing their supply of milk. The doing of that is not adding labor, but it makes the work so much more interesting and contributes so much more of real intelligence and appreciation to it.

As a native of Nova Scotia, who was fortunate enough to spend a number of years in Ontario and become closely associated with the live stock men of this country, I wish to thank them for the fine spirit they have manifested. When a person like myself, and live stock men from other Provinces, come here and associate with you and seek to secure animals with which we can improve the live stock of our Province, we are well received. Nowhere will we find a better class of men. Nowhere will we find a class of men who are doing so much to build up our country.

I believe as the years go by, and this and that man who has contributed to the improvement of our live stock—the Millers, the Davidsons, the Robsons, the Drydens, the Watts—and all these other men now living will have passed away, as they must, the monument by which they will be remembered will not be the granite or marble shaft erected in a cemetery, but a more enduring one, permanently preserved in this country in the improved live stock owned by the farmers of this Dominion. Such a monument, surviving through the years, will make our farming more productive, will lead to the building up of a permanent type of agriculture, and will conserve, as nothing else, the resources stored up in the soils of this great country of ours.

ADDRESS.

C. C. James, C.M.G., Deputy Minister of Agriculture, Toronto.

Some two or three years ago the question of the continuance of the Eastern Ontario Live Stock and Poultry Show was a matter of very serious concern to those who had the direction of the same. The entries and attendance were limited, and the only thing that there seemed to be plenty of was space. The question was, "Is it worth the cost?" Some of us who have had considerable experience in connection with agricultural matters along the lines of organization, had thought that anything of this kind once undertaken should not be changed or dropped, except for good and substantial reasons, and so they said we will give it another trial, and then the proposition was made: "If we could only get our friend Mr. Peter White, of Pembroke, to take the direction of this, then we cannot have any excuse whatever, if we fail." He came in, and you see the results. Some of us who are working on the inside know that a great measure of the success has been due to the gentleman who presides over this meeting to-night. What is wanted in Ontario agriculture along all lines is intelligent enthusiastic leadership.

There is no line of agricultural work in the Province of Ontario that cannot be developed away beyond its present possibilities, if we could only get the right men interested in that work, and we are getting people interested in agricultural work. I remember the last time I had an opportunity to address people gathered at the Winter Fair in Ottawa. There was only a small handful in a smaller room than this. Not only the people who are directly concerned in agriculture are becoming interested in it, but the people who are not living upon the farms are becoming interested in it. I had an opportunity last evening, in the city of Quebec, of addressing not so large an audience, made up, not of farmers, but of men who are engaged in other lines of work. We talked agriculture, and apparently they were interested in the subject. It is not simply you men and women who are living upon the farms in Eastern Ontario that have an interest in agricultural development, but every man, woman and child living in Eastern Ontario should have an interest in the success of this show which is being held in the city of Ottawa. This fact is beginning to find its way into the minds of the people, and that is why this show is beginning to grow. You have all seen a tree planted out, and for a year or two there was very little evidence of growth. It was taking these few years to adjust itself to its conditions or surroundings, but, once it had become adjusted and started to grow, then the growth was rapid and continuous. The Eastern Show, held here in the city of Ottawa, has taken a few years to get itself adjusted to Eastern conditions, but, now that it has started to grow, its future will be measured simply by the capacity of the buildings in which you are housing it. I suppose someone will be complaining about these buildings not being large enough. No sooner is the building up than it is condemned for being too small; in fact, before it is paid for. If there is any sure sign of substantial active growth, that is the proper state of affairs, and I sincerely hope that the live stock men, poultry men, and dairymen of Eastern Ontario will, for a good many years to come, find the buildings at their disposal too small to hold their exhibits, and too small to accommodate the crowds who come out to attend this exhibition. Your chairman made the statement in his address that we were on the verge of a great agricultural uplift or development in this Province. He has been studying the situation, and I can only emphasize what he has said. I believe that we have entered

on a development in connection with agriculture such as you have never before seen during your lives. I can take you to sections of the Province of Ontario where there is an activity in connection with agricultural work that we have not seen for the past twenty or twenty-five years. Men and women who are living upon the farms and engaged in agricultural work are wide awake; they are asking questions; they are looking for information. The best of all, they are putting into operation these simple and up-to-date principles, which the best farmers of the Province have found so effective in the development of their work. You will find in these sections that the values of agricultural property have been steadily advancing for the last two or three years, and that, perhaps, is the best index of agricultural development. I do not say that that is taking place in all parts of the Province, but I say that there are sections in the Province of Ontario where there has been a real awakening of agricultural interest, and it is accompanied by a steady, rapid increase in agricultural values. If you look into the work that has been carried on there, you will find that the men and women engaged in it are studying agricultural questions, and they are suiting their work to the demands of the present day. Do you farmers of Eastern Ontario realize what a wonderful change has been coming over this province in the last fifteen or twenty years? Do you know that forty years ago there were in all the towns and cities of the Province of Ontario just about as many people as there are to-day in the one city of Toronto. That means that forty years ago there were just as many men and women living upon the farms of Ontario, producing, and having for their home market, only as many people as are to-day living in the city of Toronto, 375,000; whereas to-day we have in the towns and cities, the non-producers, but consumers of farm products, a population of a little more than the entire population living upon our farms. Now a change of population of that kind must necessarily create a great change in market conditions. At the same time, there has been growing up within the last twenty-five years a market to the West of the lakes which must be very carefully considered. You will recall that it was just twenty-five years ago that the Canadian Pacific Railway was finished, and since then thousands and hundreds of thousands of people have gone out upon the Western Prairies, and have taken up land, made homes, and erected towns and cities. Their line of production is narrow, and the whole population of these Western Prairie Provinces are consumers of most of the articles which you farmers here produce on your farms. So that, while we have been developing in Ontario an immense home market, we have developed in the Prairie Provinces a Western market. I suppose it will be a surprise to some of you to know that regular shipments of eggs and poultry go from the Province of Ontario clear across the continent to British Columbia and are consumed in the City of Vancouver, and it may surprise some of you to know that the Province of Manitoba last year imported no less than twelve million dozen of eggs. I was told that, about one year ago, buyers came down from Winnipeg and practically cleared out all the surplus products that were stored in the City of Ottawa. We have West of the Rockies a rapidly increasing population that is demanding certain articles of food each year in larger quantities, which you farmers here in Eastern Ontario are particularly fitted to produce. Then we have growing up to the North of us in Northern Ontario another Province, so to speak; another district of this Province from which there will come, in the next five or ten years, increasing demands for articles which they cannot produce upon their farms and which you can produce.

We are just on the eve of great development in Eastern Ontario in connec-

tion with our towns and cities. The Western people have the idea that the choice portion of Ontario lies to the West of Toronto, and that part of Ontario has developed in manufacturing and along certain lines of agriculture. It is able to produce certain things which you do not produce here; but, if I do not read the times wrongly, I can see a development coming in Eastern Ontario of manufacturing such as the West has never known. We are just entering upon that new age of manufacturing which is the outcome of the development of electricity through water-power, and when it comes to the development of that great natural asset Eastern Ontario has Western Ontario beaten to a finish. The water powers which are to be found within a short distance of all the cities and towns and villages in Eastern Ontario are not going to lie idle. Capitalists and others who are concerned in the development of cheap power must, of necessity, come into Eastern Ontario and develop these powers, and the result will be development in Eastern Ontario within the next ten or fifteen years that will create a new condition of affairs and that will develop a large and valuable home market.

Taking all these things into consideration with all these markets, not simply for food, but for food of the best quality; not simply for eggs, but for fresh eggs; not simply for butter, but for the best quality of butter; adding to that the increasing demands of the Western Provinces for our horses and our fruit and our poultry and eggs, yes, and for our butter and cheese; again, adding to that the demands that are coming from these extraordinary rich mining camps of Northern Ontario where the prices always go to the top notch; then it seems to me that the future of agriculture in Eastern Ontario is exceedingly promising. The farmer must be prepared to take advantage of the situation. The interest which you are taking in exhibitions of this kind warrants the opinion that you are ready to take advantage of the new conditions; that you are bound, if possible, to bring into your work the latest methods and the most approved lines of development.

What has been wrong with the agriculture of this Province? Has there been anything discovered in the last fifteen or twenty years that has a tendency to revolutionize agricultural work? I gave an address not a great while ago in which I referred to five or six of the most important things in connection with agricultural work, and, if you will allow me, I will repeat these. The first was the proper and thorough drainage of the land; second is the selection and sowing of only the best seed; and third, having nothing but the best and most profitable stock upon the farm. Caring for these in the best way, giving them the best food, and putting your products on the market in a right manner. Supposing all the farmers would apply these rules to their business, would not there be a revolution in agricultural work? The point I want to make is this, that there would be a revolution brought about, not by any new discovery, not by anything that had been found or developed within the last twenty-five, fifty or one hundred years, but by simply applying to our work the simple, everyday, farm principles that have been known for a hundred years. It is not necessary that an angel should come down from the sky, or that learned men should come from the ends of the earth to give us a remedy whereby agriculture in Ontario can be regenerated—all that is necessary is that we should apply to our farm work the old and simple principles that our fathers and our grandfathers knew long before we were born. The trouble with the whole thing is that it is so simple. One would think the farmers of this country had been waiting for something new, something exceedingly intricate, something complicated, something mysterious, to apply to their work in order that it might be revolutionized. At last they are getting down to

the application of these very old and simple principles. The benefits of drainage were known away back in the Old Country by our fathers and our grandfathers, and by their fathers and grandfathers. The principle of the drainage of land is as old as civilization, and why do not we, as a farming community, get down to business in connection with this work and drain our lands? At the present rate it will take us about one hundred years to get the farm lands of the Province of Ontario properly drained. Some of us will not be here to see it done. We should get stirred up to the importance of these things. We must stop talking and reading about these things and get down to the actual doing of them.

If you get into certain sections of Ontario you will find that they have quit talking and that they are doing something further, they are working, they are getting down to the application of these simple principles to their work. They are draining the land that needs it. They are sowing only the best seed. They are testing their cows in order to know whether they are worth keeping. They are studying the question of the proper feeding and caring of these cows. They are looking into the question of the care and handling of the milk. They are taking an interest in their poultry work, and the question of fresh eggs is a matter of importance and concern; and as they develop a better practice they are beginning to find that not only is their interest in agricultural work increasing, and the pleasure they are getting out of their work increasing, but the bank account at the end of the year is increasing, and their land is increasing in value year by year. And when you go into these communities you find that a regeneration has started and one can hardly venture to say where it will end. The farming community of this country are beginning to take hold of this question, and once we get them all moving along right lines there will not be anything to stop them.

We were told last night that the farmers of the other Provinces were looking to Ontario for their stimulus and their example. I wonder if we realize the great responsibility that puts upon us, when we know that the farmers away down by the sea are wondering what we are doing up here, and that the farmers out on the prairie are interested in the work that we are doing and that the farmers on the Pacific coast are looking to us. We must not become conceited in our work, yet it is well to know that the farmers of Ontario are being looked to by the people of the other Provinces, and, if we live up to our responsibilities, then we will feel that we are not simply Ontario farmers, but citizens of the whole Dominion of Canada.

SEED CORN.

E. D. Eddy, Seed Branch, Department of Agriculture, Ottawa.

During the last few years there has been a marked increase in the area devoted to corn in Eastern Ontario and Quebec. According to the report of the Ontario Bureau of Industries, 132,641 acres were devoted to corn in that section of Ontario east of and including the counties of Renfrew and Hastings in 1909, which is an increase of 23,126 acres, or about 21 per cent., since 1902. But while there has been a large increase in the total area in corn, the most marked feature is the increased proportion of the crop that is being grown for the silo. In 1902 there were 68,763 acres under corn for the silo in the district mentioned, while in 1909 there were 94,306 acres, an increase of 36 per cent. During the same period the area under corn for husking decreased from 40,762 to 38,335, or about 6 per cent.

These figures bring out very forcibly the growing importance of the corn crop in this section, and also the increasing popularity of the silo. It is only within recent years that successful methods have been found for storing corn fodder and preserving it in good shape for winter feeding. The silo has solved this problem, and now the farmers of Eastern Ontario are able to utilize the corn crop to much better advantage and consequently much larger areas are devoted to it. For some time the value of ensilage was discounted, as feed of inferior quality was produced through improper methods of cutting and storing the corn, or through the use of undesirable varieties. For a time there was a tendency to use varieties that would produce the largest total yield of fodder, regardless of quality. Then in many cases the corn was cut too green, with the result that sour ensilage was produced; but latterly it has been found that much better results are obtained if the corn is allowed to become fairly well matured before cutting, and if a variety is grown that will mature fairly early and produce a large proportion of ears, even if the total yield is less. What the feeder and stockman wants is a field of corn that is a full stand and uniform throughout and that will produce a large yield of fodder of good quality and ripen sufficiently early to be ready for the silo before danger of frost. The first step toward this end is to secure seed that is most likely to give the desired results, and this is the phase of the question to which I should like to give particular attention for a few minutes.

Acclimated Seed.—One of the first essentials for the production of ensilage corn is the selection of a variety or strain suited to the conditions under which it is to be grown. One of the greatest problems of corn growers in this section of the country has been to secure an adequate supply of acclimated seed. Until a few years ago, at least, the bulk of the seed corn for ensilage production was imported from the Western and Southern states. In some instances fairly good crops were produced, but often results were very unsatisfactory.

There are two principal reasons why this corn is not likely to give satisfaction here. In the first place, larger and later varieties are grown in the corn states than will do well here. The large Dent varieties or strains, which are favorites in the Southern states, are selected for heavy yielding capacity rather than quality or early maturity and are not usually suited to our conditions. Then there is a decided advantage in getting seed that has been produced under conditions as similar as possible to those under which the crop is to be grown. It is a well recognized law of nature that plants tend to adapt themselves to their environment, and a great variation may be found in the same variety of corn when grown under different conditions. Southern grown strains will produce large stalks, heavy foliage, with deep-kernelled ears that will be late in maturing; while Northern grown corn will be smaller in the ear, finer in the stalk, and will mature earlier. These variations become more or less fixed after a few years, so that the characteristics suited to local conditions are reproduced through using acclimated seed.

Varieties and Strains.—Then the question of variety is very important, and care should be exercised not to get corn that is too late. Experience has shown that among the varieties best adapted to Eastern Ontario and Quebec are Longfellow, Angel of Midnight, Compton's Early, White Cap Yellow Dent and Selected Leaming. Leaming has constituted the main crop at the Central Experimental Farm for ten or twelve years, and during that time, with possibly one exception, has given satisfactory results, the quality of corn being almost invariably such as to make first-class silage. The Flint varieties produce a somewhat better quality of ensilage and will ripen earlier, but of course the yield is not so heavy as with

the Dents. As a rule, the Dent varieties mentioned can be depended on to be sufficiently early in this district and to give satisfactory results. However, there is sometimes considerable difference between different strains of the same variety, depending on the selection, and every effort should be made to secure an early strain.

Where Good Seed May be Obtained.—Where then may the corn growers of Eastern Ontario and Quebec get acclimated seed of desirable varieties and strains? The best source is Southwestern Ontario. Within the last few years the corn growing industry has received a great impetus in the Lake Erie district, and there are a large number of farmers making a specialty of growing seed corn. The Ontario Corn Growers' Association has members scattered over Essex, Kent, Elgin and Lambton, and they are producing practically all of the common Dent and Flint varieties. The Dents most commonly grown are Leaming, White Cap Yellow Dent and Bailey. While the Association does not handle seed corn or guarantee the seed sold by its members, the secretary, whose address is Essex, will be glad to furnish a list of the members who have seed for sale. Many of them fill orders for individuals as well as for clubs. I have reliable information that the seed corn produced in the Lake Erie district last season is of exceptionally good quality, the best they have had for years, so I have no hesitation in recommending the farmers of this district to look to the Lake Erie counties for their seed supply. You can secure good seed there, with $1.25 for Dents and $1.50 for Flints about the ruling price, except in a large wholesale way, which will be much more likely to give satisfaction than anything you can import.

In making this statement I realize that there were some complaints last year regarding the quality of seed corn secured from Southwestern Ontario, but it is safe to say that there would have been as much dissatisfaction, if not more, with corn purchased in the States. Last year it was especially difficult to procure good seed corn, for the reason that there were early frosts in the corn producing districts, and the fall weather was generally unfavorable for maturing. This applied to the States as well as to Ontario; if anything, to an even greater extent. So that if the results last year were not everything that might be desired from Ontario-grown corn, it is almost certain that they would have been no better, and perhaps considerably worse, if imported corn had been used.

Strong Vitality Essential.—Last year there were some instances in this part of the country of at least partial crop failure through sowing corn of low vitality. This is probably the most common cause of an uneven stand, and often a complete failure is the result of sowing seed that will not grow. As previously stated, it was exceptionally difficult to secure seed of strong vitality last spring, but there should not be the same trouble this year, as there was an abundant crop of seed of high quality in Southwestern Ontario last fall. But there is always more or less uncertainty in this regard, and farmers should not neglect to test their seed before sowing it.

When corn is husked it contains from 25 to 33 per cent. water, and unless carefully handled the vitality is likely to be injured during the drying process. The first essential is that the corn be stored where there is thorough ventilation. If it is placed in a warm room without free circulation of air while it contains a large amount of moisture, it is likely to grow or mould; or, if allowed to freeze before becoming dry, the vitality will be reduced or entirely destroyed. Curing seed corn is therefore a particular process, and the difficulties attending it strongly emphasize the importance of taking proper precautions against using seed of low vitality.

It is difficult to lay down hard and fast rules for judging the vitality of corn, but in general the indications of impaired vitality are:

Kernels that are blistered and shrunken, especially the germs and backs;

Kernels with chaff or cob adhering to the tips; and

Kernels from which the tip cap has been removed, exposing the black covering of the germ.

These are the danger signs, and if there is any suspicion whatever a test should be made before planting the seed. This may be done in a box of earth, or with moist cloth or blotting paper, kept in a room at about living temperature, or samples may be sent to the seed laboratory at Ottawa, where tests will be made free of charge.

THE LEGAL GERMINATION STANDARD.—The standard percentage germination for corn, as fixed by Order in Council under the Seed Control Act, is 95. Under the provisions of the Act, all seed must germinate up to at least two-thirds the standard for good seed of the kind, or be labelled with the percentage germination. Corn must be capable of germinating at least 63 per cent., or be tagged with the percentage germination, to be legally sold for seed. Dealers and growers realize that farmers will not buy tagged corn, so there is practically none offered. If your corn is not tagged, it is practically a guarantee that it will germinate at least 63 per cent., and, if it does not, the man who sold it to you, whether he is a grower or a seed merchant, is liable to prosecution.

GERMINATION TESTS.—In regard to germination tests, an important point to be observed is what we might call the vitality, as distinguished from the actual percentage germination. In reporting germination tests at the seed laboratory, we give two reports, the preliminary and the final. The preliminary is the percentage of seeds germinating in four days, and the final the percentage germinating in ten days. Some samples will give a low preliminary test and will be high in the final, while others will give practically the same test in the preliminary and final; that is, all the seeds alive will germinate in four days. A high preliminary test is an indication of strong vitality. A sample that has been injured by poor storage conditions or some other cause may retain enough life to give a fairly high percentage germination test in the ten days, but still not be strong enough to start growth in four days. Such seed is dangerous, for if it happens to encounter unfavorable conditions when planted it is likely to rot in the ground, as it lacks energy and reserve strength. On making tests therefore, or reading reports, look for quick growth as well as high percentage germination.

ADVANTAGES OF PURCHASING IN THE EAR.—How then can seed be secured that is true to variety and strain, and of strong vitality? The best safeguard against poor seed is to insist on purchasing seed corn in the ear rather than shelled. There are several reasons for this. When you purchase in the ear you have a chance to see the type and quality of all the ears you are using for seed. If there is a mixture of variety or any undesirable types, you can detect it and discard what you do not want. On the other hand, if the corn is shelled, the identity of the ears is lost, and you may get a number of all sorts of types, with a liberal sprinkling of deformed ears and nubbins. From such seed you can reasonably expect a crop lacking in uniformity and general desirability. Then, when corn is shelled, the vitality is much more likely to be impaired. There is also a further advantage in this system in that most of the growers have now adopted the plan of shipping in the ear, and the best corn goes out in that way. If you buy shelled corn you are likely to get what was not good enough to offer in the ear.

CO-OPERATIVE BUYING.—In regard to the business end of purchasing, the

best method will depend largely upon local conditions. Many of the farmers' clubs have been successful with the co-operative plan. Where it can be managed, there is perhaps no better way than for a number of farmers to join together and order direct from the grower. It might also be good economy to send a representative to select the corn before purchasing, as I understand some clubs are doing. If this cannot be done, orders may be placed with growers by individuals, although the price will likely be somewhat higher. In any case, place your orders early, so that you may have plenty of time to examine your seed and test it, and, if necessary, change it before seeding time.

Summary.

1. Secure seed that is acclimated. The best source is Southwestern Ontario.
2. Secure varieties and strains true to type and adapted to your conditions. Avoid excessively large and late varieties.
3. Take every precaution against using seed of low vitality, and in making germination tests look for rapid growth as well as high percentage germination.
4. Insist on purchasing seed corn in the ear, and see that the ears are all of good quality and true to type and variety.
5. When practicable, purchase direct from the grower by the co-operative plan.
6. Place your order early, so you will have plenty of time to examine your seed and test it before seeding.

Q.—Would not the seed corn that is grown here be preferable to the seed corn that is grown in Western Ontario?

A.—Perhaps it would if you could get it fully matured. It is important to have it fully matured; the nearer you get it to maturity the better.

Q.—I have grown corn for twenty-five years, and I have had it mature every year.

Q.—I got corn from Western Ontario and less than half of it was good.

Mr. Eddy.—In the Western States last year the newspapers complained very much of the poor corn crop, and I think it is safe to say that the results would have been equally disappointing if you had secured your seeds from the States.

APPENDIX.

PRIZE WINNERS AT ONTARIO PROVINCIAL WINTER FAIR

Guelph, December 5th to 9th, 1910.

HORSES.

Clydesdale Stallions, foaled previous to January 1st, 1907. Twenty entries.

1—Craigista (imp.) [10587] (12925), bay, stripe, night hind leg white, foaled March 11th, 1904. Bred by Chas. A. MacKessack, Morayshire, Scotland. Exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Prince Thomas [4028] (10262); dam, Princess May [23132] (18560).

2—Gay Sprig (imp.) [7794] (13849), bay, ratch, off fore and both hind legs white, foaled June, 1906. Bred by Robert Dick, Kippen Station, Scotland. Exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Refiner [5418] (12301); dam, Lily Favorite [13882] (17552).

3—Baron Russell (imp.) [9595] (13351), bay, white face, off fore leg black, other three legs white, foaled, 1905. Bred by Andrew Russell, Wigtonshire, Scotland. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Baronson [5347] (10981); dam, Flora of Balseir [18379] (21769).

4—Baron Howes (imp.) [7791] (13847), black, stripe, four white legs, foaled May 1st, 1906. Bred by John Brown, Howes, Annan, Scotland. Exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Baron Hood [6137] (11260); dam, Crown Pearl of Arnprior [5888] (9560).

5—Sir Humphrey (imp.) [7140], (11942), brown, stripe, white legs, foaled July 1st, 1901. Bred by Wm. Taylor, Park Mains, Renfrew, Scotland. Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Shepely Prince [7139] (11182); dam, Mary of Park [11401] (14862).

6—Homestake (imp.) [9586] (14943), bay, with white hairs through coat, white on face, hind legs and off fore leg white, foaled May 4th, 1906. Bred by Wm. Hogarth, Plane Tree House, Beamish, Northumberland, England. Exhibited by John A. Boag and Son, Queensville, Ont.; sire, Silver Cup [5653] (11184); dam, Helene [9223] (14707).

7—Top Spot (imp.) [7795] (13848), bay, white face, hind legs and near fore foot white, foaled May 25th, 1906. Bred by A. and W. Kerr, Gretna, Scotland. Exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Baron Hood [6137] (11260); dam, Lady Stormont [13886] (16157).

Clydesdale Stallions, foaled in 1907. Nine entries.

1—Sailor King (imp.) [11701] (14829), dark brown, face and legs white, foaled April 28th, 1907. Bred by Wm. Renwick, Meadowfield, Corstorphine, Midlothian, Scotland. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Pacific [9528] (13119); dam, Sarah Grand [7409] (15758).

2—Glenavon (imp.) [11467] (15237), bay, white face, off fore leg dark, others white, foaled June 25th, 1907. Bred by Geo. W. Finlayson, Kirkton, Culcross, Clackmannan, Scotland. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Baron of Boquhan [10547] (12840); dam, Darling of Kirkton [7323] (15036).

3—Cawdor Laird (imp.) [11455] (14621), bay, stripe, nigh fore leg white, half over knee, hind legs white, foaled April 11th, 1907. Bred by Earl Cawdor, Cawdor Castle, Nairn, Scotland. Imported and exhibited by John A. Boag & Son, Queensville, Ont.; sire, Baron Hood (imp.) [8489] (11260); dam, Lady Mabel [9164] (15433).

4—Glencraig Champion (imp.) [9765] (14989), brown, stripe, four white feet, foaled May 8th, 1907. Bred by Wm. Young, Glencraig, Campbelltown, Argyleshire, Scotland, Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Haplands Pride [8089] (13515); dam, Glencraig Fancy [18964] (20648).

5—Lifeguard (imp.) [9162] (14738), brown, white face, four white points, foaled April 15th, 1907. Bred by Adam Gill, Keldhead Farm, Stainton, Penrith, Cumberland, England. Imported and exhibited by Thos. Mercer, Markdale, Ont.; sire, Montrave Watchman [9156] (12681); dam, Dapper [17232] (19529).

6—Invergowrie (imp.) [11468] (15258), bay, face and hind legs white, little white on off fore foot, foaled April 28th, 1907. Bred by Geo. Robertson, Bullion, Invergowrie, Forfarshire, Scotland. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Marmion [5466] (11429); dam, Blacon Fancy [22894] (20267).

7—Wamphray Lad (imp.) [9685] (14884), bay, face, off fore and hind legs white, foaled May 1st, 1907. Bred by Jas. Mitchell, Wamphray, North Berwick, Berwickshire, Scotland. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Count Victor [8434] (12108); dam, Dora of Springfield [18691] (18046).

Clydesdale Stallions, foaled in 1908. Fifteen entries.

1—Baron Marcus (imp.) [11702] (15140), black, face, off fore and hind legs white, little white on nigh fore hoofhead, foaled April 29th, 1908. Bred by J. B. Stevenson, Chapelcroft, Dalbeattie, Kirkcudbright, Scotland. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Baron's Pride [3067] (9122); dam, Jean of Chapelcroft [20122] (21855).

2—Golden Favorite (imp.) [11456] (15547), black, face and legs white, foaled May 18th, 1908. Bred by Robert Buchanan, Livingstone Mill, Mid Calder, Mid Lothian, Scotland. Imported and exhibited by John A. Boag and Son, Queensville, Ont.; sire, Golden Pride [10603] (13013); dam, Lily of the Mill [9172] (17418).

3—Baron Crawford (imp.) [9592] (14936), brown, ratch, four white legs, foaled May 23rd, 1908. Bred by Hugh W. B. Crawford, Chapmanton Castle, Douglas, Scotland. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Blacon Sensation [8048] (12487); dam, Jennie of Chapmanton [15618] (16589).

4—Lord Morven (imp.) [11457] (15548), bay, face and legs white, foaled June 8th, 1908. Bred by Robert Leiter, Yardbeut, Strathaven, Lanarkshire, Scotland. Imported and exhibited by John A. Boag and Son, Queensville, Ont.; sire, Sir Hugo [4923] (10924); dam, Susy of Yardbent [22789] (21465).

5—The Star (imp.) (11689), foaled June 28th, 1908. Bred by J. McLaren, Wester, Third Farm, Gartmore, Perthshire, Scotland. Exhibited by Crawford and McLachlan, Widder, Ont.; sire, Baronson [5347]; dam, Bell of Wester Third [23485].

6—Netherby (imp.) [11778] (15678), black, with grey hairs, face and legs white, foaled June 8th, 1908. Bred by The Seaham Harbour Stud, Limited, Seaham Harbour, Sunderland, England. Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Silver Cup [5653] (11184); dam, Sweet Nell [24623] (16346).

7—Theodore (imp.) (11688), foaled May, 1908. Bred by R. McCulloch, Kepdarroch, Gargunnock, Stirlingshire, Scotland. Exhibited by Crawford and McLachlan, Widder, Ont.; sire, Royal Edward [6141]; dam, Flashwood Princess [19198].

Clydesdale Stallions, foaled in 1909. Three entries.

1—Stirling (imp.) [11471] (15559), bay, white hairs through coat, ratch, white legs, foaled May 8th, 1909. Bred by James Walls, Muirton, Stirling, Stirlingshire, Scotland. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Royal Edward [6141] (11495); dam, Lily of Muirton [12842] (18462).

2—Pirate Prince (imp.) [11781] (15682), brown, face, off fore and both hind pasterns white, foaled April 6th, 1909. Bred by James Duncan, Coupar Grange, Coupar-Angus, Perthshire, Scotland. Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Baron O'Dee [5369] (11264); dam, Maid of Rye Hill [24630] (23619).

Clydesdale Mares, foaled previous to January 1st, 1908. Eleven entries.

1—Baroness Insch (imp.) [20270] (23247), light brown, face and hind legs white, foaled, 1907. Bred by R. A. Innes, Wrangham, Insch, Aberdeenshire, Scotland. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Casabianca [4843] (10523); dam, Insch Maggie [18160] (19697).

2—Moncreiffe Duchess (imp.) [22690] (24214), brown, ratch, nigh fore and off hind legs white, off fore and nigh hind legs white half way to knee, and hock, foaled May, 1904. Bred by Alexander Taylor, Kirton, Alvah, Banffshire, Scotland. Exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Moncreiffe Marquis [6375] (9953); dam, Ardlethen Barry [22000] (18400).

3—Black Queen (imp.) [23567] (23431), dark brown, white face, with two dark spots on brow, fore feet and hind legs white, foaled May 6th, 1906. Bred by Allan M. Douglas, Spotsmains, Kelson, Roxburgshire, Scotland. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Baron O'Dee [5369] (11264); dam, Kitty of Kirkcudbright [11295] (13382).

4—Estelle (imp.) [23569] (25439), very dark brown, stripe, three white legs, foaled May 28th, 1907. Bred by George and John L. Leslie, Nethermills, Grange, Keith, Scotland. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Up-to-Time [3552] (10475); dam, Hettie Carruchan [17755] (17842).

5—Fanny Clark (imp.) [14049] (Vol. 30, p. 40, S.), bay, small ratch, near fore ankle and both hind feet white, foaled June 6th, 1905. Bred by Robert Clark, Scotland. Exhibited by Fred J Wilson, Riverbank, Ont.; sire, Baron Maclachran (imp.) [4587] (12035); dam, Fanny of Bogdavie (imp.) [14094] (13743).

6—Daisy 2nd (imp.) [11882] (Vol. 30, p. 686, S.), bay, ratch, white spot on off fore pastern, hind legs white, foaled March 29th, 1904. Bred by John Morris, Clyth Mains, Calthness, Scotland. Exhibited by Geo. Clayton, Peepabun, Ont.; sire, Baron Kent [7288] (12031); dam, Daisy Duchess [11893] (20072).

7—Lightsome Lady (imp.) [17176] (22029), brown, stripe, near fore and hind legs white, foaled April, 1907. Bred by Robert Riddell, Blackhall, Paisley, Renfrewshire, Scotland. Exhibited by John Orr, Galt, Ont.; sire, King's Ransom [9173] (14212); dam, Lightsome Lass [17185] (20248).

Clydesdale Mares, foaled in 1908. Nine entries.

1—Zuleika (imp.) [23072] (25195), bay, blaze, white legs, foaled May 15th, 1908. Bred by John Marr, Uppermill, Tarves, Aberdeenshire, Scotland. Imported and exhibited by John A. Boag and Son, Queensville, Ont.; sire, Everlasting [5346] (11331); dam, Zenith [19259] (16906).

2—Royal Rosie (imp.) [23171] (25216), bay, spot on face, white legs, foaled, 1908. Bred by James McLaren, Alton, Stirling, Stirlingshire, Scotland. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Royal Edward [6141] (11495); dam, Rose of Banleath [9308] (14301).

3—Helen McGregor (imp.) [23570] (25440), black, face and hind feet white, foaled May 5th, 1908. Bred by John Duncan, Blackhill, Findon, Aberdeenshire, Scotland. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Edward McGregor (imp.) [9699] (13462); dam, Nell of Barras [23017] (23622).

4—Countess of Croy (imp.) [20268] (23245), black, face and hind feet white, foaled May, 1908. Bred by David Weir, Drum Mains, Croy, Dumbartonshire, Scotland. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Baron's Best [8123] (11597); dam, Lily of Drum Mains [20669] (21958).

5—Miss Black (imp.) [23269] (25258), black, stripe, night fore pasterns and hind legs white, little white on hoofhead of off fore pastern, foaled May, 1908. Bred by John Thompson, Wellington Farm, Brayton, Cumberland, England. Imported and exhibited by Smith and Richardson, Columbus, Ont.; sire, Hillhead Chieftain [9217] (12176); dam, Jewel of Wellington [22936] (25254).

6—Castle Daisy (imp.) [20499], dark chestnut, face, front legs and off hind leg white, outside of nigh leg black, foaled June 7th, 1908. Bred and exhibited by Geo. Clayton, Peepabun, Ont.; sire, Castle King (imp.) [5753] (12517); dam, Daisy 2nd (imp.) 11882.

Clydesdale Mares, foaled on or after January 1st, 1909. Seven entries.

1—Hilda Thomas (imp.) [22866] (25105), bay, face, nigh fore and both hind legs white, foaled May, 1909. Bred by Alexander J. M. Anderson, Yonder Bognie, Huntly, Scotland. Imported and exhibited by John A. Boag & Son, Queensville, Ont.; sire, Everlasting [5346] (11331); dam, Hilda [22796] (21067).

2—Miss Cocker (imp.) [23069] (25192), brown, face and legs white, foaled May 8th, 1909. Bred by Alexander Simpson, Ardlogie, Fyvie, Aberdeenshire, Scotland. Imported and exhibited by John A. Boag and Son, Queensville, Ont.; sire, Pride of Blacon [4072] (10837); dam, Ardlogie Lass [22795] (24284).

3—Dolly Acme, 18338, bay, stripe, four white feet, foaled April 7th, 1909. Bred and exhibited by Frank W. Bradley, Enfield, Ont.; sire, Acme (imp.) [6187] (10485); dam, Queen MacGregor [15486].

4—Yett Priscilla (imp.) [22420] (24811), bay, stripe, nigh hind leg white, foaled May 27th, 1909. Bred by J. and J. Wilson, Yett, Liberton, Carnwath, Lanarkshire, Scotland. Exhibited by Vere Cunningham, Carlaw, Ont.; sire, Earl of Angus [7109] (12134); dam, Yett Queenie [16633] (17200).

5—Nellie Baker (19457), bay, stripe in face, hind legs white, foaled May 27th, 1909. Bred and exhibited by Ira Baker, Cainsville, Ont.; sire, All Gold [3479]; dam, Maggie (12310).

6—Jess McGregor (imp.) [23083] (25149), black, white on face, white legs, foaled May 22nd, 1909. Bred by Wm. McGregor, Bellsdyke, Bothkennar, Stirlingshire, Scotland. Imported and exhibited by A. F. McNiven, St. Thomas, Ont.; sire, British Chief [8491] (12500); dam, Jess [22932] (24062).

7—Rosebud [23182], bay, face and legs white, foaled May 8th, 1909. Bred and exhibited by Alexander Farr, Floradale, Ont.; sire, Rozelee (imp.) [6734] (10638); dam, Nell.

Canadian-bred Clydesdale or Shire Stallions, foaled previous to January 1st, 1908. Six entries.

1—Baron Charming [10723], brown, face, fore pasterns and hind legs white, foaled May 26th, 1906. Bred by John Miller, McIntyre, Ont. Exhibited by John Davidson, Ashburn, Ont.; sire, Lord Charming [2264] (7564); dam, Baroness Montague (imp.) [4446] (15281).

2—Jim Macbay [7420], dark bay, white in face, four white feet, foaled May 17th, 1907. Bred by Nicholas C. Montague, Jarvis, Ont. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Alexander's Heir (imp.) [2557] (10151); dam, Miss Annie of Erie [2413].

3—Riverside Coin [5746], black, white face, hind ankles and left fore foot white, foaled April 23rd, 1905. Bred by A. Peterson, Hawkesville, Ont. Exhibited by Gordon Peterson, St. Jacob's, Ont.; sire, King's Coin (imp.) [4221]; dam, Riverside Jess [22952].

4—Brilliant Baron [8987], dark brown, star and stripe, off fore foot white around hoof, hind legs white, foaled April 29th, 1907. Bred and exhibited by Wm. Wagester, Tavistock, Ont.; sire, Baron Wallace (imp.) [5419] (12473); dam, Effie Deans [5085].

5—Dandy Jim [8830], bay, stripe on face, near hind fetlock white, foaled June 1st, 1907. Bred and exhibited by James Paton, Swinton Park, Ont.; sire, Sparnelbank (imp.) [5199] (13214); dam, Royal Rosie (imp.) [6414].

Canadian-bred Clydesdale or Shire Stallions, foaled in 1908. Fourteen entries.

1—Dandy Prince [9533], black, face and legs white, spot on belly, foaled June 27th, 1908. Bred and exhibited by R. C. Rogerson, Fergus, Ont.; sire, Prince Orla (11471); dam, Maggie 4th of Drum (imp.) (13172).

2—Royal Glamis [9034], light chestnut, foaled June 24th, 1908. Bred by James Dickson, Atwood, Ont. Exhibited by Geo. Gropp, Milverton, Ont.; sire, Knight of Glamis [4533]; dam, Belle of Perth [2810].

3—Bold Acme [10921], bay, face, fore and off hind feet white, foaled June 22nd, 1908. Bred and exhibited by Geo. Henderson, Keady, Ont.; sire, Acme (imp.) [6187] (10485); dam, Bold Jean [3087].

4—Royal Prince [11030], face and fetlocks white, foaled May 4th, 1908. Bred by Albert Phoenix, Greenbank, Ont. Exhibited by R. M. Holtby, Manchester, Ont.; sire, Royal Flush (imp.) [4790]; dam, Nellie.

5—Honest Sandy [10483], bay, face and feet white, foaled May 20th, 1908. Bred and exhibited by Geo. Botham, Bradford, Ont.; sire, Celtic Baron (imp.) [5415] (12894); dam, Sally Bradford [20957].

6—Lord Chattan [11189], foaled June 10th, 1908. Bred and exhibited by R. Milne and Sons, Green River, Ont.; sire, Gallant Chattan [4223]; dam, Nellie Lee [14869].

7—King of Cassel [10885], black, face, nigh fore foot and hind legs white, foaled May 22nd, 1908. Bred and exhibited by Geo. Wettlaufer, Cassel, Ont.; sire, Blackband (imp.) [6194] (11623); dam, Cassel Queen [24738].

Canadian-bred Clydesdale or Shire Stallions, foaled on or after January 1st, 1909. Twelve entries.

1—Fascination [10244], bay, face and legs white, white spot on off side behind fore leg, foaled June 20th, 1909. Bred by F. P. Richardson, Columbus, Ont. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Black Ivory (imp.) [7761] (13367); dam, Blair Gowrie 2nd [3320].

2—Imperial Cornerstone [10335], bay, stripe, off fore foot and hind legs white, foaled May 24th, 1909. Bred and exhibited by Charles Groat, Brooklin, Ont.; sire, Cornerstone (imp.) [3505] (11016); dam, Polly Newday [3026].

3—Home Comfort's Joy [10403], foaled May 20th, 1909. Bred and exhibited by Wm. Parkinson, Jarvis, Ont.; sire, Alexander's Heir [1015] 2557; dam, Lady Patterson [20757].

4—Bay Ivory [10245], bay, small star, snip, and four white legs, foaled June 15th, 1909. Bred by W. P. Richardson, Columbus, Ont. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Black Ivory (imp.) [7761] (13367); dam, Belle McGregor [4851].

5—Choice One [10389], bay, stripe, hind legs white, foaled June 6th, 1909. Bred and exhibited by David Russell, Brougham, Ont.; sire, Two in One [2383]; dam, Polly Macneilage [3032].

6—Mutineer [10865], bay, stripe, off fore foot, nigh fore and both hind legs white, foaled June 21st, 1909. Bred by Geo. Charlton, Dunerief, Ont. Exhibited by Harry Hedley, Denfield, Ont.; sire, Prince Romeo (imp.) [3536] (8144); dam, Goldie 4th (imp.) [5563].

7—Sundrum Prince [10983], bay, stripe, fore feet and hind legs white, foaled May 27th, 1909 Bred and exhibited by W. A. McNiven, Ryckman's Corners, Ont.; sire, The Squire (imp.) [8751] (12771); dam, Lady Reginald (imp.) [15230] (18768).

Canadian-bred Clydesdale or Shire Stallions, foaled in 1910. Seven entries.

1—Grand View Baron [11011], bay, face and legs white, foaled March 20th, 1910. Bred and exhibited by R. H. Crake, Bradford, Ont.; sire, Celtic Baron (imp.) [5415] (12894); dam, Jean of Lawrenceholm (imp.) [10064].

2—Baron Shapely [10982], foaled June 2nd, 1910. Bred and exhibited by John Bright, Myrtle Station, Ont.; sire, Black Ivory [7761]; dam, Sweet Afton (imp.) [13789].

3—King Alfred [10873], bay, face and fore pasterns white, little white on hind legs above pasterns, foaled April 13th, 1910. Bred and exhibited by Geo. Clayton, Peepabun, Ont.; sire, Castle King (imp.) [5753] (12517); dam, Scottish Rose [7970].

4—Acme's Fame [10999], bay, face, off fore hoofhead and hind fetlocks white, foaled May 11th, 1910. Bred and exhibited by W. W. Holtby, Manchester, Ont.; sire, Acme (imp.) [6187]; dam, Lady Tetrault (imp.) [13762].

5—Zorra Lad [11018], light bay, face and legs white, foaled June 2nd, 1910. Bred and exhibited by Edward Lock, Innerkip, Ont.; sire, Crown Gold (imp.) [7422] (14895); dam, Queen [25013].

6—Scottish Reward [10874], bay, stripe, off fore pastern white, nigh hind leg white above pastern, foaled May 25th, 1910. Bred and exhibited by Geo. Clayton, Peepabun, Ont.; sire, Scottish Celt [2749] (10007); dam, Daisy 2nd (imp.) [11882].

Canadian-bred Clydesdale or Shire Mares, foaled previous to January 1st, 1908. Four entries.

1—Scottish Rose [7970], brown, white face, foaled June 20th, 1904. Bred and exhibited by Geo. Clayton, Peepabun, Ont.; sire, Scottish Celt (imp.) [2749] (10007); dam, Fan Borthwick [5263].

2—Mapledale Daisy [15562], chestnut, face and four legs white, foaled May 12th, 1906. Bred and exhibited by W. A. Francis, Sutton West; sire, Royal Baron (imp.) [4722] (11161); dam, Topsy [12239].

3—Marden Queen [20868], bay, stripe, hind legs white, foaled July 9th, 1907. Bred by Wm. Barker and Son, Marden, Ont. Exhibited by John R. Watson, Eden Mills, Ont.; sire, King's Seal (imp.) [6733] (12623); dam, Jennie.

4—Moss Rose [14300], bay, stripe, three white legs, foaled May 1st, 1903. Bred and exhibited by A. and J. McMahon, Wyoming, Ont.; sire, Royal Hampton (imp.) [2785] (10001); dam, Imperial Bell.

Canadian-bred Clydesdale or Shire Mares, foaled in 1908. Eleven entries.

1—Castle Queen [17810], bay, face and nigh legs white, off hind leg black outside, foaled May 27th, 1908. Bred and exhibited by Geo. Clayton, Peepabun, Ont.; sire, Castle King (imp.) [5753] (12517); dam, Fan Borthwick [5263].

2—Pearl of Roxburgh [17651], dark brown, stripe, off hind foot white, foaled June 12th, 1908. Bred and exhibited by Wm. Pollock, Seagrave, Ont.; sire, Right Forward (imp.) [4363] (12310); dam, Queen of Roxburgh (imp.) [4790].

3—Clyde Park Bay Queen [16461], bay, with grey hairs through coat, face and legs white, foaled May 6th, 1908. Bred and exhibited by A. F. McNiven, St. Thomas, Ont.; sire, Keir Democrat (imp.) [7018] (12187); dam, Nora Queen (imp.) [11014].

4—Pride of Dromore [17002], bay, ratch, near fore and both hind feet white, foaled April 20th, 1908. Bred and exhibited by W. F. Elliott, Coleman, Ont.; sire, Baron Beau (imp.) [5766] (12434); dam, Dromore Princess [11134].

5—Charming Rose [21595], dark bay, face, near ankle and hind legs white, foaled May 26th, 1908. Bred and exhibited by Anthony Chebott, Elsinore, Ont.; sire, Charmer of Coniston (imp.) [7152] (11655); dam, Bold Minnie [18809].

6—Merry Bell [23595], foaled June 7th, 1908. Bred and exhibited by Wm. Parkinson, Jarvis, Ont.; sire, Merriment [2780] (6061); dam, Mabel Clark [8169].

Canadian-bred Clydesdale or Shire Mares, foaled in 1909. Twelve entries.

1—Rosvelva [24119], bay, stripe, white legs, foaled May 2nd, 1909. Bred by John Bright, Myrtle Station, Ont. Exhibited by C. A. Towriss, Riverbank, Ont.; sire, President Roosevelt (imp.) [7759] (13651); dam, Queenie (imp.) [13791] (18587).

2—Medea Marquis [20542], bay, face and legs white, foaled May 1st, 1909. Bred by Robert Amos, Guelph, Ont. Exhibited by C. M. Blyth, Marden, Ont.; sire, Moncreiffe Marquis (imp.) [6735] (9953); dam, Medea (imp.) [10952].

3—Queen of Fashion [24453], brown, ratch, nigh fore and both hind legs white, foaled June 11th, 1909. Bred and exhibited by Richard Dickieson and Son, Ariss, Ont.; sire, Present Fashion (imp.) [7194] (13125); dam, Jennie Lynedoch [3590].

4—Oak Park Princess [24568], bay, face and nigh hind pastern white, foaled May 20th, 1909. Bred and exhibited by Oak Park Stock Co., Ltd., Brantford, Ont.; sire, Master Maurice (imp.) [6116] (13097); dam, Lady Roxborough (imp.) [11345].

5—Dolly of Marshill [23579], brown, face and legs white, foaled May 20th, 1909. Bred by J. R. Horne, Marsh Hill. Exhibited by R. M. Holtby, Manchester, Ont.; sire, Acme (imp.) [6187]; dam, Rose of Marshill [23578].

6—Sundrum Queen [24757], bay, spot on face, off fore foot and hind legs white, foaled May 3rd, 1909. Bred and exhibited by W. A. McNiven, Ryckman's Corners, Ont.; sire, The Squire (imp.) [8751] (12771); dam, Duckie Queen (imp.) [15319] (18779).

Canadian-bred Clydesdale or Shire Mares, foaled in 1910. Four entries.

1—Rose Buchanan [23700], bay, four white feet, white face, spot on left side, foaled May 12th, 1910. Bred and exhibited by W. J. O'Neil, Arthur, Ont.; sire, Baron Buchanan [6101]; dam, Rosalind [13299].

2—Mollie Currie [24753], bay, stripe, hind feet white, foaled May 5th, 1910. Bred and exhibited by F. H. Elliott, Coleman, Ont.; sire, Baron Currie (imp.) [7734] (12445); dam, McQueen's Daughter [15236].

3—Acme's Topsy [23324], black, foaled May, 1910. Bred and exhibited by Leslie Coates, Shirley, Ont.; sire, Acme (imp.) [6187]; dam, Topsy [14916].

4—Eureka Victoria [22787], bay, stripe, nigh fore and both hind feet white, foaled April 24th, 1910. Bred by Jas. J. Hales, Chatham, Ont. Exhibited by Anthony Chebott, Elsinore, Ont.; sire, Eureka Prince (imp.) [7811] (13466); dam, Lucretia (imp.) [13931].

Shire Stallions, foaled previous to January 1st, 1908. Two entries.

1—Cranmore Girton [533] (imp.), bay, white hind legs to hock, white off fore fetlock, foaled in 1904. Bred by James Hay, Whittlessa, Cambs. Exhibited by Archie Reid, Jarrett's, Ont.; sire, Girton Harold (20518); dam, Ramsay Pink (29807).

2—Proportion (imp.) [582], grey, foaled June 28th, 1907. Bred by J. Alsopp, England. Exhibited by Porter Bros., Appleby, Ont.; sire, Nailstone Ragget Jacket (21689); dam, Tuttle Brook Fuschia [337].

Shire Stallions, foaled in 1908. Two entries.

1—Holdenby Mack (imp.) [703], bay, stripe, four white feet, foaled May 30th, 1908. Bred by John Chambers and Sons, Northampton, England. Exhibited by A. F. McNiven, St. Thomas, Ont.; sire, Iceland (16734); dam, Holdenby Hilda (imp.) [533] (54177).

Shire Stallions, foaled in 1909. Four entries.

1—Tuttlebrook King (imp.) [758] (Vol. 32 E.), foaled in 1909. Bred by F. Pickworth, Lines, England. Exhibited by John Gardhouse and Sons, Highfield, Ont.; sire, Buckingham King Harold (17823); dam, Lively.

2—Tuttlebrook Esquire (imp.) [760] (Vol. 32 E.), foaled 1909. Bred by John Gathercole, Wisbeck, England. Exhibited by John Gardhouse and Sons, Highfield, Ont.; sire, Deighton Bar (16633); dam, Smart (55873).

3—Maplehurst Forest Oak [678], bay, foaled April 29th, 1909. Bred and exhibited by R. D. Ferguson, Port Stanley, Ont.; sire, Bay Prince IX. [523]; dam, Deeping Rose [315].

4—Flamboro King [666], dark chestnut, white face, foaled May 6th, 1909. Exhibited by W. Pearson and Son, Hamilton, Ont.; sire, Alake 3nd [539] (22061); dam, Edie of Holdenby [223] (imp.).

Shire Mares, foaled previous to January 1st, 1908. Two entries.

1—Tuttlebrook Gem (imp.) [477] (Vol. 31 E.), brown, foaled in 1907. Bred by J. W. Leverton. Exhibited by John Gardhouse and Sons, Highfield, Ont.; sire, Watnall Warrior (20147); dam, Violet (imp.).

2—Peggy [353], chestnut, white face, white hairs through coat, one white stocking, foaled May 15th, 1906. Exhibited by Wm. Pearson and Son, Hamilton, Ont.; sire, Alake 2nd [539] (22061); dam, Edie of Holdenby [223] (imp.).

Shire Mares, foaled in 1908. Four entries.

1—Kitchener's Topsy [371], grey, foaled April 15th, 1908. Bred by J. Breckon and Son, Appleby, Ont. Exhibited by Porter Bros., Appleby, Ont.; sire, Baron Kitchener (imp.) [365]; dam, Regent's Lofty (imp.) [277].

2—Viola Gem [380], brown, foaled May 10th, 1908. Bred by John Gardhouse and Sons, Highfield, Ont. Exhibited by Porter Bros., Appleby, Ont.; sire, Admiral Togo [399]; dam, Viola [185].

3—Maplehurst May Queen [485], brown, foaled May 12th, 1908. Bred and exhibited by R. D. Ferguson, Port Stanley, Ont.; sire, Bay Prince IX. [523]; dam, Queen of Sheen [316].

Shire Mares, foaled on or after January 1st, 1909. Three entries.

1—Tuttlebrook Active (imp.) [595] (Vol. 32 E.), foaled in 1909. Bred by John T. Jarrad, Lines, England. Exhibited by John Gardhouse and Sons, Highfield, Ont.; sire, Rolleston King (23647); dam, Blossom.

2—Gipsy of Valleydale [597], light chestnut, stripe on face, off hind leg white, foaled April 30th, 1910. Exhibited by W. Pearson and Son, Hamilton, Ont.; sire, Holdenby Chief [569] (26304); dam, Edie Holdenby [223] (imp.).

3—Holdenby Sweetheart (imp) [558], foaled April, 1909. Bred by John Chambers and Sons, Holdenby, England. Exhibited by W. D. Monkman, Bondhead, Ont.; sire, Holdenby Abbott (25813); dam, Holdenby Cheerful [375] (57233).

Hackney Stallions, foaled previous to January 1st, 1908. 15.2 hands and over. Seven entries.

1—King Chocolate —342—, bay, foaled 1904. Bred by T. and C. Ross. Exhibited by A. Yaeger, Simcoe, Ont.; sire, Chocolate Jr. (4188); dam, (10023) Her Majesty.

3—Marion Cassius (imp.) —415— (10032), dark bay, two white socks, foaled in 1902. Bred by R. W. Prichard, Coldmarion, Carnarvon, Wales. Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Cassius (2397); dam, Brocade (2591).

3—Glenniffer (imp.) —425— (9242), bay, small star, hind heels white, foaled 1904. Bred by D. Evans and Sons, Llwyncadfor, Henllan, England. Exhibited by J. Husband, Eden Mills, Ont.; sire, Middleton Relish (7931); dam, Emlyn Molly (15761).

4—Crayke Mikado (imp.) —334— (9176), bay, star, near fore fetlock white, foaled 1904. Bred by Stephen Cliff, Western Flatts, Wortley, Leeds, England. Exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Garton Duke of Connaught (3009); dam, (13533) Halsham Topsy.

5—Warwick Albert [421] (9489), foaled in 1904. Bred and exhibited by Oak Park Stock Farm Co., Ltd., Brantford, Ont.; sire, Warwick Premier, 8333; dam, Warwick Lady, 14842.

6—Rosary (imp.) —310— (8617), chestnut, blaze, four white heels, foaled in 1901. Bred by T. D. Reed, Bedford Grange, Driffield, Yorks, England. Exhibited by the Morefield Hackney Syndicate, Rothsay, Ont.; sire, Rosador (4964); dam, Calamine (6454).

7—Symlett Gem —538—, chestnut, foaled June 2nd, 1906. Bred by Geo. Mitchell, Clark, Ont. Exhibited by Robert Brown, Guelph, Ont.; sire, Symlett Swell —291— 9020; dam, Lady Peveril —147—.

Hackney Stallions, foaled previous to January 1st, 1908. Under 15.2 hands. Four entries.

1—Derwent Performer (imp.) —429—, (8823), chestnut, foaled in 1903. Bred by J. H. Burton and Sons, Melmerby, England. Exhibited by G. H. Pickering, Brampton, Ont.; sire, Rosador (4964); dam, Dorothy Derwent (13416).

2—Blanch Surprise (imp.) —368— (8745), dark chestnut, white face, four white legs, foaled in 1903. Bred by John Beal, North Dalton, Driffield, England. Exhibited by H. G. Boag, Barrie, Ont.; sire, Rosador (4964); dam, Blanch Primrose (15634).

3—Bold Elsenhane, 582 (8383), chestnut, blaze, near fore and off hind legs white. Bred by Sir Walter Gibley, Essex, England. Imported in 1906. Exhibited by A. Yeager, Simcoe, Ont.; sire, Rosador (4964); dam, Dorothy (2016).

Hackney Stallions, foaled on or after January 1st, 1908. (Age Considered). Two entries.

1—Terrington Semaphore (imp.) —512— (10906), bay, near hind pastern white, small white spot on front of near fore coronet, few white spots on off fore coronet, foaled in 1908. Bred by Sir Gilbert Greenall, Walton Hall, Warrington, England. Imported and exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Terrington Temple Bar (9464); dam, Terrington Sunlight (14795).

Hackney Mares, foaled previous to January 1st, 1908. Three entries.

1—Warwick Princess —638—, bay, star, snip, under lip and legs white, foaled June 24th, 1907. Bred by N. Hill, Marden, Ont. Exhibited by J. F. Husband, Eden Mills, Ont.; sire, Warwick Model (imp.) —304— (8694); dam, Dappled Beauty.

2—Model Queen —635—, bay, stripe, fore and nigh hind ankles white, foaled August 15th, 1907. Bred by Frank Laidlaw, Guelph, Ont. Exhibited by J. F. Husband, Eden Mills, Ont.; sire, Warwick Model (imp.) —304— (8694); dam, Square Shot Lady.

3—Terrington Bernice (imp.) —500— (16251), bay, spot on forehead, foaled, 1902. Bred by Sir Gilbert Greenall, Walton Hall, Warrington, England. Exhibited by John A. Boag and Son, Queensville, Ont.; sire, Lord Drewton 2nd (6817); dam, Dorothy Burton (10847).

Hackney Mares, foaled on or after January 1st, 1908. (Age Considered). Two entries.

1—Lady Gold Dust —697—. light chestnut, snip, off hind foot and pastern white, foaled June 8th, 1908. Bred and exhibited by Jos. F. Smith, Ancaster, Ont.; sire, Orient (imp.) —378— (8596); dam, Wentworth —59—.

2—Fearless Beauty —698—, light chestnut, star, off hind foot and pastern white, foaled May 27th, 1909. Bred and exhibited by Jos. F. Smith, Ancaster, Ont.; sire, Orient (imp.) —378— (8596); dam, Wentworth —59—.

Standard-bred Stallions, foaled previous to January 1st, 1908. Six entries.

1—Mograzia, 42010, bay, foaled 1903. Bred by O. J. Phelps. Exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Moko 24457; dam, Congrazia, by Artevolo.

2—General Worth 37370, foaled in 1902. Exhibited by Ira. A. Mabee, Aylmer, Ont.; sire, Gambetta Wilkes; dam, Clementine 4766.

3—Jim Todd, 48162, brown, foaled, 1907. Exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Todd, 33822; dam, Baroness Helena, by Baron Wilks, 4758.

4—Michael Grattan, chestnut, foaled August 31st, 1907. Bred and exhibited by M. P. Barrie and Co., Rockwood. Ont.; sire, Dr. John; dam, by Lorraine.

5—(.....), 67273, foaled May, 1905. Bred and exhibited by A. F. Hillock, Brampton, Ont.; sire, Golden Jubilee, 29574; dam, Alma Snell, 903.

6—Steel Band, 41570, bay, foaled June, 1903. Bred by Hunter and Colter, Brantford, Ont. Exhibited by Stricker and Co., Drayton, Ont.; sire, Steel Arch, 35639; dam, Dara, by Senorita.

Standard bred Stallions, foaled on or after January 1st, 1908. Four entries.

1—General Melrose, 51154, foaled, 1908. Exhibited by J. M. Gardhouse, Weston, Ont.; sire, King Melrose, 37460; dam, Sadie Brino.

2—Oro Hancock, 48540, dark bay, black points, foaled in May, 1908. Bred and exhibited by Peter Beaver, Morriston, Ont.; sire, Oro Wilks, 30347; dam, Ida Hancock (Vol. 8, A. T. R.).

Standard-bred Mares, foaled previous to January 1st, 1908. Four entries.

1—Moko Bird, 84458, black. Exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Moko; dam, Jewry, by Jay Bird, 5060.

2—Miss M. B., Vol. XVIII., dark bay, black points, foaled May, 1907. Bred and exhibited by Peter Beaver, Morriston, Ont.; sire, Oro Wilks, 30347; dam, Ida Hancock, Vol. VIII.

Standard-bred Mares, foaled on or after January 1st, 1908. Four entries.

1—Minnie Bars, foaled May 24th, 1909. Bred and exhibited by Wm. Holman, Newry, Ont.; sire, Mombars, 11855; dam, Minnie Sentinel, 1499.

2—Mova, 79882, light bay, with white star, two white ankles, foaled in 1908. Bred and exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Mograzia, 42010; dam, Vanity W., by Haldane, 4548.

3—Joy Hillock, 95498, foaled, 1908. Exhibited by A. F. Hillock, Brampton, Ont.; sire, Golden Jubilee, 29574; dam, Hickory May, by Wiry Jim, 15617.

4—Lulu Mograzia, 79792, bay. Exhibited by Miss K. L. Wilkes, Galt, Ont.; sire, Mograzia; dam, Lulu McGregor, by Robert McGregor.

Thoroughbred Stallions, foaled previous to January 1st, 1908. Eleven entries.

1—Nasbaden—83—, 57500, chestnut, star and snip, near hind ankle white, foaled May 12th, 1907. Bred by Milton Young, Lexington, Ky. Exhibited by Thayer Bros., Aylmer, Ont.; sire, Nasturtium, 1151; dam, Miss Baden, 655.

2—Nimble Dick, 27410, black, foaled in 1901. Bred by Wm. Hendrie, Hamilton, Ont. Exhibited by John D. McGibbon, Milton, Ont.; sire, Harvey; dam, Favor Me.

3—Barrington, 27696, brown, dark points, foaled in 1901. Exhibited by Jas. W. Arthurs, Brampton, Ont.; sire, Masetto (imp.) (Vol. 9, P. 1149 A.); dam, Saucy Lass (Vol. 9, P. 917 A.).

4—Charlie Gilbert, 39997, foaled, 1904. Exhibited by A. M. McConnell, Guelph, Ont.; sire, Masetto; dam, Frogmore.

5—Glimmer—343—, 40020, golden chestnut, foaled in 1904. Bred by Wm. Hendrie, Hamilton, Ont. Exhibited by Wm. Lowes, Drayton, Ont.; sire, Martimas; dam, Flicker.

6—Yoritomo, 29652, seal brown, foaled in 1901. Bred by C. T. Boots, California. Exhibited by F. D. Parsons, Guelph, Ont.; sire, Satsuma; dam, Lucie De Lammermoor.

Thoroughbred Stallions, foaled on or after January 1st, 1908. One entry.

1—King Doal, 67083, chestnut, large white star in forehead, small white strip in face, foaled June 6th, 1909. Exhibited by F. D. Parsons, Guelph, Ont.; sire, Yoritomo; dam, Tamora.

Thoroughbred Mares, foaled on or after January 1st, 1908. Two entries.

1—(.....), 62449, light bay, foaled in 1908. Exhibited by Jas. W. Arthurs, Brampton, Ont.; sire, Barrington; dam, La Honda.

2—Miss Liberty—161—59389 A, bay, star, off ankles white, foaled April 15th, 1908. Bred by Geo. M. Hendrie, Hamilton, Ont. Exhibited by James Bovaird, Brampton, Ont.; sire, Martimas——(Vol. 7, P. 3 A); dam, Cuba Free (Vol. 9, 193 A.).

Hackney Pony Stallions, 14.1 and under, Any age. Two entries.

1—Plymouth Horace (imp.)—305—(8969), dark bay, foaled, 1903. Bred by Sir Gilbert Greenall, Walton Hall, Warrington, England. Exhibited by The Graham Renfrew Co., Ltd., Bedford Park, Ont.; sire, Sir Horace (5402); dam, Lady Kate (4117).

2—Royal Review (Imp.)—279— 10033, dark bay, star, nigh hind hoof, head and off hind ankle white, foaled in 1904. Bred by Thos. Knowles, England. Imported and exhibited by T. H. Hassard, Markham, Ont.; sire, Fireboy (7440); dam, Carita (14978).

Shetland Pony Stallions, 14.1 and under, Any age. Two entries.

1—Lees Jack, 35, imported in 1906. Exhibited by A. A. Barber, Guelph, Ont.

2—Pluto (imp.) [28] (Vol. 19, p. 125, S.S.B.), black, foaled May 19th, 1908. Bred by David Stewart, Blantyre Park, High Blantyre, Scotland. Imported and exhibited by John A. Boag and Son, Queensville, Ont.; sire, Baron Siegfried (309); dam, Phlox (2407).

Pony Stallions, any other breed, 14.1 hands and under, any age. One entry.

1—Coronation Boy, 38177, (Standard-bred), chestnut, foaled in 1902. Bred and exhibited by Jos. A. Tovell, Guelph, Ont.; sire, Guelph Boy, 22773; dam, Leora Wright, by Lorraine, 8584.

Pony Mares, any other breed, any age. One entry.

1—Gipsy Queen. Exhibited by Francis Malcolm, Guelph, Ont.

Heavy Draught Geldings or Mares, shown in single harness, foaled previous to January 1st, 1909. Eleven entries.

1—Fred, foaled June 14th, 1907. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Baron Richardson [5320].

2—Gartly, foaled June 2nd, 1907. Exhibited by Smith and Richardson, Columbus, Ont.; sire, Baron Gartly [4789].

3—Joe, bay, with white points, foaled in 1907. Exhibited by D. A. Murray, Bennington; sire, Blythe Ben (12054), Vol. 26.

4—Roy, bay roan, with white points, foaled in 1907. Exhibited by D. A. Murray, Bennington, Ont.; sire, Royal Everard (11165). Vol. 23.

5—King George, bay, foaled in 1906. Exhibited by The Dominion Transport Co., Toronto, Ont.; sire, Merry Man [3256].

6—Major Graham, chestnut, foaled 1902. Exhibited by The Dominion Transport Co., Toronto, Ont.; sire, Tofty [2123].

7—Prince, bay, foaled in 1907. Exhibited by Jas. Scott, Jr., Cromarty; sire, Red Michael (12300).

Single Heavy Draught Horses, Geldings or Mares, shown on a line. Bred in Canada, and the property of a person actually engaged in farming or agricultural pursuits only. Thirteen entries.

1—Fred (See previous section). Exhibited by Smith and Richardson, Columbus, Ont.

2—Gartly (See previous section). Exhibited by Smith and Richardson, Columbus, Ont.

3—Joe (See previous section). Exhibited by D. A. Murray, Bennington, Ont.

4—Roy (See previous section). Exhibited by D. A. Murray, Bennington, Ont.

5—Prince (See previous section). Exhibited by Jas. Scott, Jr., Cromarty, Ont.

6—Royal, bay, foaled in June, 1908. Bred and exhibited by Thos. Steadman and Sons, Wyoming, Ont.; sire, Royal Hampton, 2785.

7—Dan, foaled May, 1905. Bred and exhibited by Jas. Starkey, Arkell, Ont.; sire, Lord Charming [2269].

Heavy Draught Team in Harness, Geldings or Mares. Six entries.

1—Fred (See previous section). Gartly (See previous section). Exhibited by Smith and Richardson, Columbus, Ont.

2—Roy (See previous section). Joe (See previous section). Exhibited by D. O. Murray, Bennington, Ont.

3—Major Graham (See previous section). King George (See previous section). Exhibited by The Dominion Transport Co., Toronto, Ont.

4—Prince (See previous section). Harry, bay, foaled in 1907. Exhibited by James Scott, Jr., Cromarty, Ont.

CHAMPIONSHIPS.

Clydesdale Stallion, Any Age.

1st—Sailor King (imp.) [11701] (14829). Exhibited by the Graham Renfrew Co., Limited, Bedford Park, Ont.

Clydesdale Mare, Any Age.

1st—Baroness Insch (imp.) [20270] (23247). Exhibited by Smith & Richardson, Columbus, Ont.

Canadian-bred Clydesdale or Shire Stallion, Any Age.

1st—Fascination [10244]. Exhibited by Smith & Richardson, Columbus, Ont.

Canadian-bred Clydesdale or Shire Mare, Any Age.

1st—Rosvelva [24119]. Exhibited by C. A. Towriss, Riverbank, Ont.

Shire Stallion, Any Age.

1st—Tuttlebrook King (imp.) [758] (Vol. 32 E). Exhibited by John Gardhouse & Sons, Highfield, Ont.

Shire Mare, Any Age.

1st—Kitchener's Topsy [371]. Exhibited by Porter Bros., Appleby, Ont.

Hackney Stallion, Any Age.

1st—Derwent Performer (imp.)—429—(8823). Exhibited by G. H. Pickering, Brampton, Ont.

Hackney Mare, Any Age.

1st—Warwick Princess—638—. Exhibited by J. F. Husband, Eden Mills, Ont.

Standard-bred Stallion, Any Age.

1st—Mograzla [42010]. Exhibited by Miss K. L. Wilkes, Galt, Ont.

Standard-bred Mare, Any Age.

1st—Moko Bird, 84458. Exhibited by Miss K. L. Wilkes, Galt, Ont.

Thoroughbred Stallion, Any Age.

1st—Nasbaden—83—57500. Exhibited by Thayer Bros., Aylmer, Ont.

Pony Stallion, Any Age.

1st—Plymouth Horace (imp.)—305—(8969). Exhibited by The Graham Renfrew Co., Limited, Bedford Park, Ont.

Pony Mare, Any Age.

1st—Gipsy Queen. Exhibited by Francis Malcolm, Guelph, Ont.

SPECIALS.

Best Hackney Stallion, shown on a line.

1st—Derwent Performer (imp.)—429—(8823). Exhibited by G. H. Pickering, Brampton.

Best Hackney Mare, shown on a line.

1st—Warwick Princess—638—, bay. Exhibited by J. F. Husband, Eden Mills, Ont.

For Best Horse of a Draught Breed, shown by an amateur exhibitor, resident of the County of Brant.

1st—Nellie Baker (19457), bay. Exhibited by Ira Baker, Cainsville, Ont.

"Canadian Farm" Prize, for the Best Two Canadian-bred Clydesdale Fillies, foaled on or after January 1st, 1908.

1st—Castle Queen [17810], bay; Castle Daisy [20499], dark chestnut. Exhibited by Geo. Clayton, Peepahun, Ont.

Best Horse shown by an Amateur Exhibitor, resident of the County of Lambton.

1st—Royal. Exhibited by Thos. Steadman & Son, Wyoming.

BEEF CATTLE.

Shorthorn Steer, 2 years and under 3. Six Entries.

1st—John Brown & Son, Galt, Ont. Silver King, Feb. 1908. Sire, Prince of Fashion, 86080; dam, Golden Wreath, 38004.
2nd—John Brown & Son, Galt. Merry Star, Oct., 1907. Sire, Early Morning, 58701; dam, Jenny Linn, 39710.
3rd—J. G. Thomson, Mildmay, Ont. White Lord, May 28th, 1908. Sire, Bright Lord, 64421; dam, Duchess 9th, 75058.
4th—W. R. Durnin, Lucknow, Ont. Duke of Huron, Jan. 28th, 1908. Sire, Broadhook Pride, 71082; dam, Ruberta Wilkes, 43796.
5th—J. B. Bingeman, Bridgeport, Ont. Spotless Hope, Jan. 25th, 1908. Sire, Winning Hope 2nd (imp.), 40434; dam, Miss Mulleney 3rd, 54472.

Shorthorn Steer, 1 year and under 2. Eight Entries.

1st—James Leask, Greenbank. Roan James, Nov. 21st, 1908. Sire, Gloster's Choice, 45238; dam, Mayflower 10th, 82416.

2nd—Peter Stewart, Everton. Mildred's White, Jan. 3rd, 1909. Sire, College Senator, 46048; dam, Mildred 13th, 53465.

3rd—Kyle Bros., Ayr, Ont. Bill Buckingham, Sept. 11th, 1908. Sire, Roan King, 48526; dam, Ida Buckingham, 76688.

4th—Peter Stewart, Everton, Ont. Mildred's Lad, Nov. 20th, 1908. Sire, College Senator, 46048; dam, Mildred 18th, 74162.

5th—Geo. B. Pritchard, Elora, Ont. Rancher, Sept. 23rd, 1908. Sire, Scottish Baron, 40421; dam, Lady Beatrice, 57183.

Shorthorn Steer, under 1 year. Eight Entries.

1st—Peter White, Pembroke, Ont. Shamrock, Sept. 1st, 1909. Sire, Nonpareil Archer, 45202 (81778); dam, Crimson Bell, 46505.

2nd—F. W. Ewing, Salem, Ont. Clan Alpine, Oct. 24th, 1909. Sire, Jilt's Victor (imp.), 45187; dam, Donside Clavet, 87750.

3rd—James Leask, Greenbank. White Jim, Jan. 7th, 1910. Sire, Meadow King 72853; dam, Mayflower 10th, 82416.

4th—Harry Nickle, Everton, Ont. Tom, Oct. 16th, 1909. Sire, Senator, 69440; dam, Fly of Beverley, 35021.

5th—Leslie Bros., Rockwood, Ont. Teddie, Sept. 23rd, 1909. Sire, Challenger, 77243; dam, Dolly Stamford, 73832.

Shorthorn Heifer, 2 years and under 3. Two Entries.

1st—A. F. & G. Auld, Eden Mills, Ont.; Victor's Violet, 85107, Jan. 7th, 1908. Sire, Rose Victor, 64835; dam, Violet of Maple Hill, 60780.

2nd—John Brown & Sons, Galt, Ont. Fleurette Gem, 86203, Nov. 7th, 1907. Sire, Aberdeen Prince, 60830; dam, Fleurette 3rd, 27933.

Shorthorn Heifer, 1 year and under 2. Seven Entries.

1st—Geo. Amos & Sons, Moffat, Ont. Spring Grove Beauty, 88540, January 8th, 1909. Sire, Queen's Councillor; dam, Spring Grove Beauty.

2nd—Geo. Amos & Sons, Moffat. Pleasant Valley Fragrance, 88379, Feb. 18th, 1909. Sire, Ben Lomand, 45160; dam, Sweet Fragrance.

3rd—G. & W. Parkinson, Guelph. Roan Beauty, 95063, Oct. 26th, 1908. Sire, Bridegroom, 68702; dam, Alexandria (Vol. 19), 52220.

4th—J. M. Taylor, Guelph, Ont. Queenie's Gloster Girl, 88435, Oct. 6th, 1908. Sire, Lord Rosebury, 40397; dam, Greengill Queenie, 83019.

5th—John Brown & Sons, Galt, Ont. Daisy 4th, June, 1909. Sire, Aberdeen Prince, 60830; dam, Daisy of Kent 3rd, 66481.

Shorthorn Heifer, under 1 year. Seven Entries.

1st—Peter Stewart, Everton, Ont. Mildred's Fashion, 92789, Oct. 21st, 1909. Sire, St. Augustine, 69698; dam, Mildred 18th, 74162.

2nd—James Leask, Greenbank, Ont. May Queen, 92297, Nov. 19th, 1909. Sire, Meadow King, 72853; dam, Mayflower Girl, 81827.

3rd—F. W. Ewing, Salem. Dora of Meadow Lawn, 93021, Sept. 9th, 1909. Sire, Jilt Victor, 45187; dam, Larkspur, 27622.

4th.—Geo. Amos & Sons, Moffat. Pleasant Valley Victoria 4th, 92344, Nov. 6th, 1909. Sire, Lancaster Floral; dam, Victoria 72nd.

5th—Geo. Amos & Sons, Moffat. Nonpareil of Pleasant Valley, 92342, Oct. 28th, 1909. Sire, Lancaster Floral; dam, Nonpareil 44th.

Hereford Steer 2 years and under 3. Three Entries.

1st—Adam A. Armstrong, Fergus. Monitor, 7425, April 5th, 1908. Sire, Gladiator, 5913; dam, Delila, 5900.

2nd—The F. W. Stone Stock Co., Guelph. Prime, June 5th, 1908. Sire, Sonny, 224633; dam, Petunia, 159694.

3rd—A. E. Caulfield, per A. G. H. Luxton, Mt. Forest, Ont. Mount Forest Prince, Dec. 28th, 1907. Sire, Imperial 2034; dam, Gem 45th, 2767.

Hereford Steer, 1 year and under 2. Two Entries.

1st—Henry Reed, Mimico. Duke, Dec. 28th, 1908. Sire, Erin Chief, 6797; dam, Dolly 2, 2319.
2nd—A. E. Caulfield, per A. G. H. Luxton, Mt. Forest, Ont. Mt. Forest Pride, Jan. 10th, 1909. Sire, Imperial, 2034; dam, Little Sweetheart, 3027.

Hereford Steer, under 1 year. Two Entries.

1st—Henry Reed, Mimosa, Ont. Erin's Pride, Oct. 26th, 1909. Sire, Erin Chief, 6797; dam, Erin Rose, 2518.

Hereford Heifer, 2 years and under 3. Four Entries.

1st—L. O. Clifford, Oshawa, Ont. May Queen, 9551, Jan. 15th, 1908. Sire, Prime Lad, 6425; dam, May Bell, 9530.
2nd—H. D. Smith, Hamilton, Ont. Rubella 13th of Ingleside, 8474, Dec. 30th, 1907. Sire, Bourton Ingleside, 2410; dam, Rubella 3rd, 7558.
3rd—A. E. Caulfield, per A. G. H. Luxton, Mt. Forest. Lenora, 6973, Dec. 12th, 1907. Sire, Lord Ingleside 12th, 6773; dam, Lemonade, 2820.
4th—A. E. Caulfield, per A. G. H. Luxton, Mt. Forest. Miss Carlotta, 7382, Jan. 5th, 1908. Sire, Prime Lad 32nd, 6431; dam, Carlotta, 6326.

Hereford Heifer 1 year and under 2. Three Entries.

1st—L. O. Clifford, Oshawa. Rosette, 324675, Sept. 3rd, 1908. Sire, Prime Lad, 6425; dam, Rosetta, 101269.
2nd—L. O. Clifford, Oshawa. Beau's Columbia, 9550, Oct. 25th, 1908. Sire, Acrobat's Beau Donald, 9548; dam, British Columbia, 9549.
3rd—H. D. Smith, Hamilton. Rubella 11th of Ingleside, 8484, Oct. 15th, 1908. Sire, Bourton Ingleside, 2410; dam, Lady Rupert, 1958.

Hereford Heifer, under 1 year. Seven Entries.

1st—L. O. Clifford, Oshawa. Lady Blanche 3rd, 9591, Nov. 15th, 1909. Sire, Bourton Ingleside, 2410; dam, Lady Blanche, 6982.
2nd—H. D. Smith, Hamilton. Amy 7th of Ingleside, 9597, Sept. 7th, 1909. Sire, Bourton Ingleside, 2410; dam, Amy 3rd of Ingleside, 5886.
3rd—L. O. Clifford, Oshawa. Amy 15th, 9792, March 15th, 1910. Sire, Bourton Ingleside, 2410; dam, Amy 4th, 3045.
4th—H. D. Smith, Hamilton. Cassandra Ingleside, 9513, Sept. 1st, 1909. Sire, Bourton Ingleside, 2410; dam, Jessie 7th, of Ingleside, 8485.
5th—The F. W. Stone Stock Co., Guelph. Peach Blossom 3rd, Dec. 3rd, 1909. Sire, Dobbin, 220223; dam, Peach Blossom, 153845.

Sweepstake Hereford Heifer.

1st—L. O. Clifford, Oshawa, Ont. May Queen, 9551.

Aberdeen-Angus Steer or Heifer, 2 years and under 3. Two Entries.

1st—Jos. A. Mallaugh, Dungannon. Dell C., Nov. 12th. Sire, Sott's of William Grove, 81295; dam, Clinton Dew Drop, 46504.
2nd—Hugh McDougall, Guelph. Pleasant Rose, 120756, Nov. 18th, 1907. Sire, Lord Val. 2nd, 74188; dam, Rosey Bright, 84622.

Aberdeen-Angus Steer or Heifer, 1 year and under 2. Three Entries.

1st—James Bowman, Guelph. Elm Park Witch, 3540, Oct. 12th, 1908. Sire, Elm Park Ringleader 3rd, 1654; dam, Witch of Benton, 149.
2nd—Thos. Broadfoot, Fergus. Balmedie Lady Violet, 3666, April 1st, 1909. Sire, Elm Park Ringleader 6th, 1856; dam, Violet of Lakeside, 8883.
3rd—Thos. B. Broadfoot, Fergus, Ont. Balmedie Pride, 3525, Sept. 23rd, 1908. Sire, Elm Park Ringleader 6th, 1856; dam, Elm Park Pride, 5th, 1638.

Aberdeen-Angus Steer, under 1 year. One Entry.

1st—James Bowman, Guelph, Ont. Elm Park Kidnapper, March 10th, 1910. Sire, Cord (Vol. 2nd)—868—; dam, Elm Park Keepsake—1647—.

Aberdeen-Angus Heifer, under 1 year. Three Entries.

1st—James Bowman, Guelph. Elm Park Matilda 3rd, 4180, Oct. 7th, 1909. Sire, Elm Park Ringleader 3rd, 1654; dam, Century Place Matilda 3rd, 1660.

2nd—Thos. B. Broadfoot, Fergus. Balmedie Keepsake 2nd, 4238, Sept. 23rd, 1909. Sire, Elm Park Ringleader 6th, 1856; dam, Elm Park Keepsake 6th, 1853.

3rd—Geo. Davies & Sons, Alton, Ont. Fair Lady 11th of Glengore, 4394, Jan. 25th, 1910. Sire, Cochrane of Tweedhill, 1905; dam, Fair Lady of Cold Creek, 1372.

Galloway Steer or Heifer, 2 years and under 3. Four Entries.

1st—D. McCrae, Guelph. Cluster Lass, 1877, Jan. 5th, 1908. Sire, Berwick, 1455; dam, Cluster, 1351.

2nd—D. McCrae, Guelph. Cecelia, 1778, Oct. 13th, 1907. Sire, Cedric 4th, 1303; dam, Celinda, 1368.

3rd—Gruer Estate, per A. G. H. Luxton, Agent, Mt. Forest. Lizzie of Lismore, 1400, Jan. 23rd, 1908. Sire, Cedric 4th, 1303; dam, Lismore Lass, 1334.

4th—Gruer Estate, per A. G. H. Luxton, Agent, Mt. Forest, Ont. Custrle, 1815, Mar. 1st, 1908. Sire, Cedric 4th, 1303; dam, Cleo, 1319.

Galloway Steer or Heifer, 1 year and under 2. Four Entries.

1st—D. McCrae, Guelph, Ont. Celery, 1397, Sept. 20th, 1908. Sire, Cedric 4th, 1303; dam, Celinda, 1368.

2nd—D. McCrae, Guelph. August Lass 1868, Aug. 1st, 1909. Sire, Berwick, 1455; dam, Ranee 15th, 1661.

3rd—Gruer Estate, per A. G. H. Luxton, Agent, Mt. Forest. Cedar, 1398, Dec. 14th, 1908. Sire, Cedric 4th, 1303; dam, Adele of Puslinch, 1330.

4th—Gruer Estate, per A. G. H. Luxton, Agent, Mt. Forest. Ada, 1816, Dec. 5th, 1908. Sire, Cedric 4th, 1303; dam, Adele of Erin, 1339.

Galloway Heifer, under 1 year. Four Entries.

1st—D. McCrae, Guelph. Beauty of Ontario, 1880, Dec. 3rd, 1909. Sire, Berwick, 1455; dam, Beauty of G., 1371.

2nd—D. McCrae, Guelph. Deeside, 1875, Sept. 12th, 1909. Sire, Berwick, 1455; dam, Dee Dora, 1326.

Grades and Crosses of Any Breed, Steer, 2 and under 3. Eleven Entries.

1st—John Brown & Sons, Galt, Ont. Look Me Over, Nov., 1907. Sire, Early Morning, 58701.

2nd—Geo. B. Pritchard, Elora. Rover, Sept. 17th, 1907. Sire, Duke of Fergus, 56381.

3rd—James Bowman, Guelph. Wellington, Jan. 15th, 1908. Sire, Elm Park King 2nd, 72542.

4th—Geo. B. Pritchard, Elora. Major, Sept. 25th, 1907. Sire, Duke of Fergus, 56381.

5th—Hall & Robson, Washington, Ont. (————), Oct. 1907. Sire, Nonpareil Victor, 63307.

Grades and Crosses of Any Breed, Steer, 1 year and under 2. Nine Entries.

1st—John Brown & Sons, Galt, Ont. Bill, Dec., 1908. Sire, Glare Lad, 65000.

2nd—H. E. Alton, Jr., Everton. Hector, Nov. 1st, 1908. Sire, Jealous Hero, 55589.

3rd—Geo. B. Pritchard, Elora. Paddy, Sept. 20th, 1908. Sire, Duke of Fergus, 56381.

4th—James Leask, Greenbank, Ont. Red King, Jan. 2nd, 1909. Sire, Gloster's Choice, 45238.

5th—Hall & Robson, Washington, Ont. (————), Oct, 1908. Sire, Nonpareil Victor, 63307.

Grades and Crosses of Any Breed, Steer, under 1 year. Nine Entries.

1st—H. E. Alton, Jr., Everton. Bobbie, Oct. 7th, 1909. Sire, Waverley, 72804.

2nd—John Lowe, Elora. Black Douglas, Nov. 14th, 1909. Sire, Elm Park Ring Leader, 1817.

3rd—John Dickieson, Rockwood, Ont. Joe, Oct. 15th, 1909. Sire, St. Augustine, 69698.

4th—James McIntosh, Gourock, Ont. Harry, Oct. 25th, 1909. Sire, Bellman, 59616.

5th—Kyle Bros., Ayr. Ont. Spring Valley Stamp, Nov. 15th, 1909. Sire, Clipper Chief (imp.), 64220.

Grades and Crosses of Any Breed, Heifer, 2 years and under 3. Five Entries.

1st—Geo. B. Pritchard, Elora. Daisy, Dec. 18th, 1907.
2nd—John Brown & Sons, Galt. Ethel.
3rd—John Brown & Sons, Galt. Pearl.
4th—A. & J. McMahan, Wyoming. Lambton's Daisy, June 17th, 1908. Sire, Prince Victor 7th, 68960.

Grades and Crosses of Any Breed, Heifer, 1 year and under 2. Eight Entries.

1st—James Leask, Greenbank. Miss Mc., Sept. 27th, 1908. Sire, Gloster's Choice, 45238.
2nd—Kyle Bros., Ayr. (————), Mar. 12th, 1908. Sire, Clipper Chief (imp.), 64220.
3rd—Geo. B. Pritchard, Elora. Lady Gray, Sept. 5th, 1908. Sire, Duke of Fergus, 56381.
4th—Peter Stewart, Everton. Snowball, Sept. 7th, 1908. Sire, Imperial Beau, 61726.
5th—John Brown & Sons, Galt, Ont. Mabel.

Grades and Crosses of Any Breed, Heifer, under 1 year. Nine Entries.

1st—James Leask, Greenbank. Queen Tib, Sept. 28th, 1909. Sire, Gloster's Choice, 45238.
2nd—Wm. J. Dickieson, Hespeler. Snowball, Nov. 25th, 1909. Sire, Lord Howe, 64237.
3rd—W. R. Durnin, Lucknow. Olive, Feb. 5th, 1910.
4th—Thos. Forrest, Guelph. Redwing, Oct. 22nd, 1909.
5th—Daniel Wright, Ponsonby. Woodfield Missie, Oct. 12th, 1909. Sire, Woodfield Glory, 70946.

Pure-breds or Grades and Crosses, of Any Breed, Steer, 2 years and under 3. (Open only to Amateurs). Eleven Entries.

1st—James Cumming, Blyth. Scottie, Jan., 1907. Sire, Scottish Volunteer, 55044.
2nd—Hall & Robson, Washington. (————), Oct., 1907. Sire, Nonpareil Victor, 63307.
3rd—James Cumming, Blyth. Joe, Dec., 1907. Sire, Silver Plate, 40203.
4th—J. G. Thomson, Mildmay. White Lord, May 28th, 1908. Sire, Bright Lord, 64421; dam, Duchess, 9th. 75058.

Pure-breds or Grades and Crosses of Any Breed, Steer. 1 year and under 2. (Open only to Amateurs). Thirteen Entries.

1st—H. E. Alton, Jr., Everton. Hector, Nov. 1st, 1908. Sire, Jealous Hero, 55589.
2nd—Hall & Robson, Washington, Ont. (————), Oct., 1908. Sire, Nonpareil Victor, 63307.
3rd—David Cook, Amulree, Ont. Oliver, Nov. 15th, 1908. Sire, Stamford Prince, 61034.
4th—Chas. W. Gerow, Guelph, Ont. Buster Brown, Feb. 12th, 1909. Sire, Bud's Emblem, 63860.

Pure-breds or Grades and Crosses of Any Breed, Steer, under 1 year. (Open only to Amateurs). Fifteen Entries.

1st—F. W. Ewing, Salem, Ont. Clan Alpine, Oct. 24th, 1909. Sire, Jilt Victor, 45187; dam, Donside Clavet, 87750.
2nd—H. E. Alton, Jr., Everton, Ont. Bobbie, Oct. 7th, 1909. Sire, Waverley, 72804.
3rd—John Dickieson, Rockwood, Ont. Joe, Oct. 15th, 1909. Sire, St. Augustine, 69698.
4th—Henry Nickle, Everton, Ont. Tom, Oct. 16th, 1909. Sire, Senator, 69440; dam, Fly of Beverley, 35021.
5th—Leslie Bros., Rockwood. Teddie, Sept. 23rd. Sire, Challenger, 77243; dam, Dolly Stamford, 73832.

Pure-breds or Grades and Crosses of Any Breed, Heifer, 2 years and under 3. (Open only to Amateurs). Six Entries.

1st—A. & J. McMahan, Wyoming, Ont. Lambton's Daisy, Jan. 17th, 1908. Sire, Prince Victor 7th, 68960.

2nd—James Cumming, Blyth. (————), Jan. 1907. Sire, Scottish Volunteer, 55044.
3rd—H. G. Benfield, Woodstock. Beauty, June, 1908.
4th—H. G. Benfield, Woodstock. (————), Queenie, June, 1908.

Pure-breds or Grades and Crosses of Any Breed, Heifer, 1 year and under 2. (Open only to Amateurs). Eight Entries.

1st—D. A. Graham, Wanstead, Ont. Dewdrop 2nd, Sept. 27th, 1908. Sire, Lord Blossom, 59025; dam, Dewdrop, 72203.
2nd—James Cumming, Blyth. Bettie, Nov., 1908. Sire, Scottish Volunteer, 55044.
3rd—R. Fitzsimmons & Son, Clinton. Beauty, May 1st, 1909. Sire, Lord Huron of Penzance, 79963.
4th—Chas. W. Gerow, Guelph. Daisy, Nov. 30th, 1908. Sire, Old Meldrum, 68993.

Pure-breds or Grades and Crosses of Any Breed, Heifer, under 1 year. (Open only to Amateurs). Nine Entries.

1st—F. W. Ewing, Salem. Dora of Meadow Lawn, 93021, Sept. 8th, 1909. Sire, Jilt Victor, 45187; dam, Larkspur, 27622.
2nd—W. Jas. Dickieson, Hespeler. Snowball, Nov. 25th, 1909. Sire, Lord Howe, 64237.
3rd—Chas. W. Gerow, Guelph. Jessie, Dec. 5th, 1909. Sire, Bud's Emblem, 63860.
4th—Geo. Davis & Sons, Alton, Ont. Fair Lady 11th of Glengore, 4394, Jan. 25th, 1910. Sire, Cochrane of Tweedhill, 1905; dam, Fair Lady of Coldcreek, 1372.
5th—Daniel Wright, Ponsonby. Woodfield Missie, Oct. 12th, 1909. Sire, Woodfield Glory, 70946.

Three Export Steers. Ten Entries.

1st—A. S. Walker, Dobbington.
2nd—John Brown & Son, Galt.
3rd—Hall & Robson, Washington.
4th—John Lowe, Elora.

GRAND CHAMPIONSHIP.

Best Animal in Beef Cattle Department.

1st—James Leask, Greenbank. Roan James.

DRESSED BEEF CARCASSES.

Pure-breds. Eight Entries.

1st—Jos. A. Mallaugh, Dungannon.
2nd—John Brown & Son, Galt.
3rd—Hugh McDougall, Guelph.
4th—A. E. Caulfield, Mt. Forest.
5th.—A. E. Caulfield.

Grades or Crosses. Nine Entries.

1st—Hall & Robson, Washington.
2nd—Jas. McIntosh, Gourock.
3rd—John Lowe, Elora.
4th—John F. Robertson, Milton West.
5th—John F. Robertson.

BEEF CATTLE SPECIALS.

Best Animal in Show.

1st—James Leask, Greenbank.

Grade Steer or Heifer, Any Age, sired by a pure-bred Aberdeen-Angus Bull.

1st—James Bowman, Guelph.
2nd—John Lowe, Elora.
3rd—John Lowe, Elora.
4th—John Lowe, Elora.

Grade Steer, sired by pure-bred Shorthorn Bull.

1st—J. Brown & Sons, Galt.
2nd—J. Brown & Sons.
3rd—G. B. Pritchard, Elora.

Grade Steer, sired by pure-bred Shorthorn Bull. (Open only to Amateurs).

1st—H. E. Alton, Jr., Everton.
2nd—Jno. Dickieson, Rockwood.

Best Beef Animal, under three years, shown by Amateur Exhibitor, resident of Wellington County.

1st—F. W. Ewing, Salem. 2nd—H. E. Alton, Jr., Everton.

Best Beef Animal, shown by Amateur Exhibitor, resident of Ontario County.

1st—W. D. Dyer, Columbus.

Best Beef Animal, shown by Amateur Exhibitor, resident of Huron County.

1st—James Cumming, Blyth.

Best Beef Animal, shown by Amateur Exhibitor, resident of Lambton County.

1st—A. & J. McMahan, Wyoming.
2nd—D. A. Graham, Wanstead.

SHEEP.

Cotswolds.

Ewe, under 1 year. Nineteen Entries.

1st—J. H. Campbell & Sons, Jericho. Campbell's 153, 61906, March, 1910.
2nd—E. Brien & Sons, Ridgetown. Brien's 380, 62659, 1910.
3rd—Hugh McNelly, Arkell. Nelly's 240, 62723, March, 1910.
4th—E. Brien & Sons, Ridgetown. Brien's 379, 62658, 1910.
5th—S. J. Lyons, Norval. (.....), 62623, April, 1910.

Three Ewes, under 1 year. Eight Entries.

1st—E. Brien & Sons, Ridgetown. 4th—Hugh McNelly, Arkell.
2nd—J. H. Campbell & Son, Jericho. 5th—S. J. Lyons, Norval.
3rd—G. H. Laird, Guelph.

Wether, 1 year and under 2. Eight Entries.

1st—J. H. Campbell & Son, Jericho. Rawling's 1887, 55499, March, 1909.
2nd—E. Brien & Sons, Ridgetown. Brien's A, 1909. Sire, S. 523, 42902; dam, Brien's 141, 43347.
3rd—S. J. Lyons, Norval. Norval Champion 1st, April, 1909. Sire, Rawling's 1235; dam, Maid 29742.
4th—E. Brien & Sons, Ridgetown. Brien's B, 1909. Sire, S. 523, 42902; dam, Brien's 141, 43347.
5th—J. H. Campbell & Son, Jericho. Rawling's 1889, 55501, March, 1909.

Wether, under 1 year. Thirteen Entries.

1st—E. Brien & Sons, Ridgetown. Brien's D, 1910. Sire, S. 523, 42902; dam, Brien's 141, 43347.
2nd—E. Brien & Sons, Ridgetown. Brien's E, 1910. Sire, S. 523, 42902; dam, Brien's 131, 43337.
3rd—E. Brien & Sons, Ridgetown. Brien's F, 1910. Sire, S. 523, 42902; dam, Brien's 131, 43337.
4th—S. J. Lyons, Norval.
5th—E. Brien & Sons, Ridgetown. Brien's G, 1910. Sire, S. 523, 42902; dam, Brien's 233, 50287.

Three Wethers, under 1 year. Six Entries.

1st—E. Brien & Sons, Ridgetown. 3rd—S. J. Lyons, Norval.
2nd—E. Brien & Sons.

Best Wether, under 2 years.

1st—J. H. Campbell & Son, Jericho.

COTSWOLD DRESSED CARCASSES.

Wether, 1 year and under 2. Seven Entries.

1st—S. J. Lyons, Norval.
2nd—E. Brien & Sons, Ridgetown.
3rd—E. Brien & Sons.
4th—J. H. Campbell & Son, Jericho.
5th—E. Brien & Sons.

Wether, under 1 year. Six Entries.

1st—G. H. Laird, Guelph.
2nd—E. Brien & Sons, Ridgetown.
3rd—E. Brien & Sons.
4th—Geo. Allen, Burford.

LINCOLNS.

Ewe, under 1 year. Thirteen Entries.

1st—John S. Gosnell & Sons, Ridgetown. Gosnell's 17, 22136, Spring, 1910.
2nd—John Lee & Sons, Highgate. Lee's G, No. 7, 21796, March, 1910.
3rd—John Lee & Sons, Highgate. Lee's G, No. 8, 21797, March, 1910.
4th—John S. Gosnell & Sons, Ridgetown. Gosnell's 18, 22137, Spring, 1910.
5th—John S. Gosnell & Sons. Gosnell's 19, 22138, Spring, 1910.

Three Ewes, under 1 year. Four Entries.

1st—John S. Gosnell & Sons, Ridgetown.
2nd—John Lee & Sons, Highgate.
3rd—Jos. Hornal, Muirkirk.
4th—L. Parkinson, Guelph.

Wether, 1 year and under 2. Four Entries.

1st—L. Parkinson, Guelph. (————), Spring, 1909. Sire, Bailey's 43, 17478; dam, Parkinson's 412, 12515.
2nd—John S. Gosnell & Sons, Ridgetown. Jarvis, Spring, 1909. Sire, Dudding's 265, (imp.) 11154; dam, Gosnell's No. 1, 13939.
3rd—L. Parkinson, Guelph. (————), Spring, 1909. Sire, Bailey's 43, 17478; dam, Parkinson's 407, 12510.
4th—John S. Gosnell & Sons, Ridgetown. Hartford, Spring, 1909. Sire, Dudding's 265, (imp.) 11154; dam, Gosnell's No. 11, 15280.

Wether, under 1 year. Twelve Entries.

1st—L. Parkinson, Guelph. (————), Spring, 1910. Sire, Game Boy, 15024; dam, Tolton's 17, 15364.
2nd—John Lee & Sons, Ridgetown. Kent 3rd, March, 1910. Sire, Boston, 18776; dam, Lady R, 15411.
3rd—John Lee & Sons, Highgate. Kent 7th, March, 1910. Sire, Boston, 18776; dam, Susan, 18780.
4th—John S. Gosnell & Sons, Ridgetown. Darwin, Spring, 1910. Sire, Dudding's 265, (imp.) 11154; dam, Gould's 32, 17376.
5th—John S. Gosnell & Sons. Lawson, Spring, 1910. Sire, Dudding's 265, (imp.) 11154; dam, Gosnell's No. 6, 15275.

Three Wethers, under 1 year. Five Entries.

1st—John Lee & Sons, Highgate.
2nd—L. Parkinson, Guelph.
3rd—John S. Gosnell & Sons, Ridgetown.
4th—John Lee & Sons.

Best Wether, under 2 years.

1st—L. Parkinson, Guelph.

LINCOLN DRESSED CARCASSES.

Wether, 1 year and under 2. Three Entries.

1st—Jno. S. Gosnell & Sons, Ridgetown.
2nd—John S. Gosnell & Sons.
3rd—L. Parkinson, Guelph.

Wether, under 1 year. Six Entries.

1st—John Lee & Sons, Highgate.
2nd—L. Parkinson, Guelph.
3rd—John S. Gosnell & Sons.
4th—John Lee & Sons, Highgate.

LEICESTERS.

Ewe, under 1 year. Fifteen Entries.

1st—A. & W. Whitelaw, Guelph. Tilly of Guelph 5th, 13332, Feb., 1910.
2nd—Robert McDonald, Cranbrook. McDonald's Ewe No. 5, 13236, March, 1910.
3rd—A. & W. Whitelaw, Guelph. Maggie Templeton, 13336, March, 1910.
4th—Hastings Bros., Crosshill. Kelly's 732, 13277, March, 1910.
5th—Adam Thomson, Shakespeare. Thomson's Best No. 1, 13577, March, 1910.

Three Ewes, under 1 year. Seven Entries.

1st—A. & W. Whitelaw, Guelph
2nd—Hastings Bros., Crosshill.
3rd—Robert McDonald, Cranbrook.
4th—Adam Thomson, Shakespeare.
5th—A. & W. Whitelaw.

Wether, 1 year and under 2. Five Entries.

1st—John Orr, Galt. Jack, April, 1909. Sire, Lord Linden, 4145; dam, Flirt Orr, 6059.
2nd—A. & W. Whitelaw, Guelph. Little Billy, 12751, April, 1909.
3rd—A. & W. Whitelaw, Guelph. Little Billy 2nd, 12752, April, 1909.
4th—Hastings Bros., Crosshill. Joker, March, 1909. Sire, Royal Victor, 10517; dam, Pauline, 6628.

Wether, under 1 year. Thirteen Entries.

1st—A. & W. Whitelaw, Guelph. Little Peter, 13680, April, 1910.
2nd—Hastings Bros., Crosshill. Stanley Roy, March, 1910. Sire, Stanley Royal, 8296; dam, Cloverdale Minnie, 11989.
3rd—L. Parkinson, Guelph. (————), Spring, 1910. Sire, O. A. C., 1333, 9827; dam, Ruth Boyd 5th, 8804.
4th—John Orr, Galt. Jim, April, 1910. Sire, Scottish Chief, 11399; dam, Lila Orr, 6058.
5th—Adam Thomson, Shakespeare. Jack, March, 1910. Sire, Kelly's 738, 13283; dam, Thomson's 9, 12762.

Three Wethers, under 1 year. Five Entries.

1st—A. & W. Whitelaw, Guelph.
2nd—Adam Thomson, Shakespeare.
3rd—L. Parkinson, Guelph.
4th—John Orr, Galt.

Best Wether, under 2 years.

1st—John Orr, Galt.

LEICESTER DRESSED CARCASSES.

Wether, 1 year and under 2. Three Entries.

1st—Hastings Bros., Crosshill.
2nd—Hastings Bros.
3rd—A. & W. Whitelaw, Guelph.

Wether, under 1 year. Eleven Entries.

1st—Adam Thomson, Shakespeare.
2nd—A. & W. Whitelaw, Guelph.
3rd—Robert McDonald, Cranbrook.
4th—A. & W. Whitelaw.
5th—John Orr, Galt.

OXFORDS.

Ewe, under 1 year. Twelve Entries.

1st—Peter Arkell & Sons, Teeswater. Dolly A. 10, of 1910, 53164, March, 1910.
2nd—Peter Arkell & Sons. Dolly A. 11, of 1910, 53165, March, 1910.
3rd—Peter Arkell & Sons. Dolly A. 12, of 1910, 53166, March, 1910.
4th—E. Barbour, Erin. Barbour's 190, 55623, March, 1910.
5th—J. O. Cerswell, Bondhead. Cerswell's 150, 55610, March, 1910.

Three Ewes, under 1 year. Five Entries.

1st—Peter Arkell & Sons, Teeswater.
2nd—J. A. Cerswell, Bondhead.
3rd—E. Barbour, Erin.
4th—Jos. Benham, Everton.

Wether, 1 year and under 2. Four Entries.

1st—Peter Arkell & Sons, Teeswater. Bruce 92, of 1909, 51355, April, 1909.
2nd—J. W. Lee & Sons, Simcoe.
3rd—J. A. Cerswell, Bondhead. Cerswell's 124, 51335, April, 1909.
4th—W. E. Wright, Glanworth. Bruce 90, 51353, 1909.

Wether, under 1 year. Seven Entries.

1st—E. Barbour, Erin. Barbour's 221, 54535, March, 1910.
2nd—J. A. Cerswell, Bondhead. Cerswell's 175, 55611, March, 1910.
3rd—J. A. Cerswell. Cerswell's 176, 55612, March, 1910.
4th—Jos. Benham, Everton. Benham's 54. April, 1910. Sire, Parkinson's 40, 49575; dam, Erin's 1, 37680.
5th—J. W. Lee & Sons, Simcoe. Hewitt's 12, April, 1910. Sire, Ashford's 249, 48043; dam, Hewitt's 3, 46533.

Three Wethers, under 1 year. Four Entries.

1st—J. A. Cerswell, Bondhead.
2nd—E. Barbour, Erin.
3rd—Jos. Benham, Everton.

Best Wether, under 2 years.

1st—P. Arkell & Son, Teeswater.

OXFORD DRESSED CARCASSES.

Wether, 1 year and under 2. Four Entries.

1st—J. W. Lee & Sons, Simcoe.
2nd—W. E. Wright, Glanworth.
3rd—J. A. Cerswell, Bondhead.
4th—Peter Arkell & Sons, Teeswater.

Wether, under 1 year. Six Entries.

1st—E. Barbour, Erin.
2nd—Jos. Benham, Everton.
3rd—J. A. Cerswell, Bondhead.
4th—J. A. Cerswell.

SHROPSHIRES.

Ewe, under 1 year. Six Entries.

1st—J. & D. J. Campbell, Woodville. (————), 325575, Spring, 1910.
2nd—J. & D. J. Campbell, Woodville. (————), 321734, Spring, 1910.
3rd—J. Lloyd-Jones, Burford. Lloyd-Jones', 324315, 1910.
4th—J. & D. J. Campbell. (————), 321730, Spring, 1910.
5th—W. D. Monkman, Bondhead. Monkman's 146, 328872, Spring, 1910.

Three Ewes, under 1 year. Four Entries.

1st—J. & D. J. Campbell, Woodville.
2nd—J. Lloyd-Jones, Burford.
3rd—J. & D. J. Campbell.
4th—W. D. Monkman, Bondhead.

Wether, 1 year and under 2. Nine Entries.

1st—J. Lloyd-Jones, Burford. Lloyd-Jones', 302974, 1909.
2nd—J. & D. J. Campbell, Woodville. (————), 303303, Spring, 1909.
3rd—J. & D. J. Campbell, Woodville. (————), 303306, Spring, 1909.

Wether, under 1 year. Eight Entries.

1st—J. & D. J. Campbell, Woodville. (————), 325578, Spring, 1910.
2nd—J. Lloyd-Jones, Burford. Lloyd-Jones 685, 326976, 1910.
3rd—J. & D. J. Campbell. (————), 325579, Spring, 1910.
4th—J. & D. J. Campbell. (————), 325581, Spring, 1910.
5th—J. Lloyd-Jones, Burford. Lloyd-Jones 684, 326975, 1910.

Three Wethers, under 1 year. Four Entries.

1st—J. & D. J. Campbell, Woodville.
2nd—J. Lloyd-Jones, Burford.
3rd—J. & D. J. Campbell.
4th—W. E. Wright, Glanworth.

Best Wether, under 2 years.

1st—J. Lloyd-Jones, Burford.

SHROPSHIRE DRESSED CARCASSES.

Wether, 1 year and under 2. Six Entries.

1st—J. Lloyd-Jones, Burford.
2nd—W. E. Wright, Glanworth.
3rd—W. E. Wright.
4th—A. Rudell, Hespeler.
5th—A. Rudell.

Wether, under 1 year. Five Entries.

1st—W. E. Wright, Glanworth.
2nd—A. Rudell, Hespeler.
3rd—J. Lloyd-Jones, Burford.
4th—W. E. Wright.

SOUTHDOWNS.

Ewe, under 1 year. Six Entries.

1st—Robert McEwen, Byron. McEwen Ewe 2 C., 26272, Feb., 1910.
2nd—Geo. Baker, Simcoe. Baker Ewe 225, 26370, March, 1910.
3rd—Robert McEwen. McEwen Ewe 7 C., 26275, March, 1910.
4th—Geo. Baker, Simcoe. Baker Ewe 232, 26691, March, 1910.
5th—Robert McEwen, Byron. McEwen Ewe 29 C., 26279, March, 1910.

Three Ewes, under 1 year. Three Entries.

1st—Robert McEwen, Byron.
2nd—Geo. Baker, Simcoe.
3rd—Geo. Baker.

Wether, 1 year and under 2. Six Entries.

1st—J. Lloyd-Jones, Burford. (————), 25210, 1909.
2nd—J. Lloyd-Jones, Burford. (————), 25213, 1909.
3rd—Robert McEwen, Byron. McEwen Wether 21 B., 25268, Feb., 1909.
4th—Geo. Baker, Simcoe. Baker Wether No. 7, 25045, March, 1909.

Wether, under 1 year. Seven Entries.

1st—Robert McEwen, Byron. Chapman 7 C., 26707, March, 1910.
2nd—J. Lloyd-Jones, Burford. Simenton's 67, 26455, 1910.
3rd—J. Lloyd-Jones. Simenton's 69, 26457, 1910.
4th—Robert McEwen. McEwen 4 C., 26709, Feb., 1910.
5th—Geo. Baker, Simcoe. Baker Wether 14, 26603, March, 1910.

Three Wethers, under 1 year. Four Entries.

1st—J. Lloyd-Jones, Burford.
2nd—Geo. Baker, Simcoe.
3rd—Robert McEwen, Byron.

Best Wether, under 2 years.

1st—J. Lloyd-Jones, Burford.

SOUTHDOWN DRESSED CARCASSES.

Wether, 1 year and under 2. Five Entries.

1st—J. Lloyd-Jones, Burford.
2nd—Geo. Baker, Simcoe.
3rd—Geo. Baker.
4th—Robert McEwen, Byron.
5th—Robert McEwen.

Wether, under 1 year. Four Entries.

1st—Geo. Baker, Simcoe.
2nd—Robert McEwen, Byron.
3rd—J. Lloyd-Jones, Burford.
4th—Geo. Baker.

DORSET HORNS.

Ewe, under 1 year. Four Entries.

1st—R. H. Harding, Thorndale. Tillmore 584, 10151, Nov., 1909.
2nd—John F. Robertson, Milton West, —A. G. H. Luxton Agent. (————), 10755.
3rd—R. H. Harding, Thorndal. Orchard's, 10882, April, 1910.
4th—R. H. Harding, Thorndale. Tillmore 597, 10164, Dec., 1909.

Wether, 1 year and under 2. Five Entries.

1st—R. H. Harding, Thorndale. Harding's Best, 9542, March, 1909.
2nd—R. H. Harding. Harding's 1st, 9541, March, 1909.
3rd—W. E. Wright, Glanworth. Riverview 107, 9533, 1909.
4th—W. E. Wright, Glanworth. Hunter's 163, 11151, 1909.

Wether, under 1 year. Six entries.

1st—R. H. Harding, Thorndale. Harding's Choice, 11236, Feb., 1910.
2nd—R. H. Harding. Harding's Peach, 11235, Jan., 1910.
3rd—W. E. Wright, Glanworth. Hunter's 164, Sept., 1910. Sire, Bartlett's 70, 6363; dam, Hunter's 44, 3369.
4th—R. H. Harding. Teddy, 11237, April, 1910.
5th—John F. Robertson, A. G. H. Luxton, Agent, Milton West.

Three Wethers, under 1 year. Four Entries.

1st—R. H. Harding, Thorndale.
2nd—W. E. Wright, Glanworth.
3rd—R. H. Harding.
4th—John F. Robertson, Milton West.

Best Wether, under 2 years.

1st—R. H. Harding, Thorndale.

DORSET HORN DRESSED CARCASSES.

Wether, 1 year and under 2. Five Entries.

1st—W. E. Wright, Glanworth.
2nd—W. E. Wright.
3rd—R. H. Harding, Thorndale.
4th—R. H. Harding.

Wether, under 1 year. Six Entries.

1st—R. H. Harding, Thorndale.
2nd—W. E. Wright, Glanworth.
3rd—R. H. Harding.
4th—W. E. Wright.
5th—R. H. Harding.

HAMPSHIRE AND SUFFOLKS.

Ewe, under 1 year. Three Entries.

1st—John Kelly, Shakespeare. Kelly's 80, 24839, March, 1910.
2nd—John Kelly. Kelly's 79, 24838, March, 1910.
3rd—John Kelly. Telfer's 2, 25247, Spring, 1910.

Wether 1 year and under 2. One Entry.

1st—John Kelly, Shakespeare. Bob, March, 1909. Sire, Kelly's Sailor (Imp.) 6764; dam, Jennie, 8208.

Wether, under 1 year. Three Entries.

1st—John Kelly, Shakespeare. Bill, March, 1910. Sire, Kelly's Sailor (imp.) 6764; dam, (————), 3420.
2nd—John Kelly, Shakespeare. Tom, March, 1910. Sire, Kelly's Sailor (Imp) 6764; dam, Ettie, 7218.
3rd—John Kelly, Shakespeare. Dick, March, 1910. Sire, Kelly's Sailor, 6764; dam, Ettie, 7218.

Three Wethers, under 1 year. One Entry.

1st—John Kelly, Shakespeare.

Best Wether, under 2 years.

1st—John Kelly, Shakespeare.

HAMPSHIRE AND SUFFOLKS DRESSED CARCASSES.

Wether, under 1 year. One Entry.

1st—John Kelly, Shakespeare.

GRADES OR CROSSES, SIRED BY RAM OF LONG-WOOLED BREED.

Wether, 1 year and under 2. Ten Entries.

1st—L. Parkinson, Guelph. (————), Spring, 1909. Sire, Mitchell's 150, 13435.
2nd—John Orr, Galt. Jumbo, 1909. Sire, Scottish Chief, 11399 (Leicester).
3rd—A. & W. Whitelaw, Guelph, 1909. Sire, Ulysses, 10085 (Leicesters).
4th—John S. Gosnell & Sons, Ridgetown. Highgate, March, 1909. Sire, Dudding's 265 (imp.), 11154 (Lincoln).
5th—L. Parkinson, Guelph. (————), Spring, 1909. Sire, Mitchell's 150, 13435.

Wether, under 1 year. Twenty-two Entries.

1st—John Lee & Sons, Highgate. (————), 1910. Sire, Boston, 18776 (Lincoln).
2nd—John Kelly, Shakespeare. Donald, Spring, 1910. Sire, Casper, 1365.
3rd—A. & W. Whitelaw, Guelph. (————), 1910. Sire, Ulysses, 10085, (Leicester).
4th—A. & W. Whitelaw, Guelph. (————), 1910. Sire, Ulysses, 10085, (Leicester).
5th—John Kelly, Shakespeare. Duncan, Spring, 1910. Sire, Casper, 1365.

Three Wethers, under 1 year. Nine Entries.

1st—John Kelly, Shakespeare.
2nd—John Lee & Sons, Highgate.
3rd—A. & W. Whitelaw, Guelph.
4th—L. Parkinson, Guelph.
5th—John Orr, Galt.

Best Wether, under 2 years.

1st—L. Parkinson, Guelph.

LONG-WOOLED GRADE OR CROSS, DRESSED CARCASSES.

Wether, 1 year and under 2. Five Entries.

1st—E. Brien & Sons, Ridgetown.
2nd—E. Brien & Sons.
3rd—A. & W. Whitelaw, Guelph.
4th—L. Parkinson, Guelph.
5th—Hastings Bros., Crosshill.

Wether, under 1 year. Thirteen Entries.

1st—A. & W. Whitelaw, Guelph.
2nd—L. Parkinson, Guelph.
3rd—John Lee & Sons, Highgate.
4th—E. Brien & Sons, Ridgetown.
5th—John Lee & Sons.

GRADES OR CROSSES, SIRED BY RAM OF SHORT-WOOLED BREED.

Wether, 1 year and under 2. Eleven Entries.

1st—Geo. Baker, Simcoe. (————), Spring, 1909. Sire, Telfer's Compton, 22256 (Southdown).
2nd—John Kelly, Shakespeare. Will, March, 1909. Sire, Kelly's 36, 6725.
3rd—Peter Arkell & Sons, Teeswater. (————), 1909. Sire, Cowley's Caution, 41088 (Oxford Down).
4th—J. & D. J. Campbell, Woodville. (————), Spring, 1909. Sire, (————), 303558 (Shropshire).
5th—A. Rudell, Hespeler. Rudell's No. 4, Spring, 1909. Sire, Rudell's 443, 303425 (Shropshire).

Wether, under 1 year. Fourteen Entries.

1st—J. Lloyd-Jones, Burford.
2nd—J. & D. J. Campbell, Woodville. Spring, 1910. Sire, (————), 256368 (Shropshire).
3rd—A. Rudell, Hespeler. Rudell's No. 1, Spring, 1910. Sire, W. S. C., 508, 275414 (Shropshire).
4th—J. Lloyd-Jones, Burford.
5th—W. D. Monkman, Bondhead. (————), 1910. Hanmer's, 2660, 236371 (Shropshire).

Three Wether, under 1 year. Six Entries.

1st—J. Lloyd-Jones, Burford.
2nd—J. & D. J. Campbell, Woodville.
3rd—Geo. Baker, Simcoe.
4th—A. Rudell, Hespeler.
5th—J. & D. J. Campbell.

Best Wether, under 2 years.

1st—Geo. Baker, Simcoe.

SHORT-WOOLED, GRADE OR CROSS, DRESSED CARCASSES.

Wether, 1 year and under 2. Seven Entries.

1st—W. D. Monkman, Bondhead.
2nd—W. E. Wright, Glanworth.
3rd—A. Rudell, Hespeler.
4th—J. & D. J. Campbell, Woodville.

Wether, under 1 year. Nine Entries.

1st—J. Lloyd-Jones, Burford.
2nd—J. A. Cerswell, Bondhead.
3rd—Geo. Baker, Simcoe.
4th—A. Rudell, Hespeler.
5th—A Rudell.

LINCOLN SPECIAL PRIZES.

Ewe, under 1 year.

1st—John S. Gosnell & Son, Ridgetown.
2nd—J. Lee & Sons, Highgate.
3rd—J. Lee & Sons.
4th—John S. Gosnell & Sons.

Pen of Three Ewes, under 1 year.

1st—John S. Gosnell & Sons, Ridgetown
2nd—J. Lee & Sons, Highgate.

Wether, 1 year and under 2.

1st—L. Parkinson, Guelph.
2nd—John S. Gosnell & Sons.
3rd—L. Parkinson.

Wether, under 1 year.

1st—L. Parkinson, Guelph.
2nd—John Lee & Sons, Highgate.
3rd—John Lee & Sons.

Pen of Three Wethers, under 1 year.

1st—John Lee & Sons.
2nd—L. Parkinson.
3rd—John S. Gosnell & Sons.
4th—John Lee & Sons.

Ewe, under 1 year, shown by an Amateur Exhibitor.

1st—J. Hornal, Muirkirk.
2nd—D. A. Graham, Wanstead.
3rd—J. Hornal, Muirkirk.

Pen of Three Ewes, under 1 year, shown by an Amateur Exhibitor.

1st—Jos. Hornal, Muirkirk, Ont.

Grade Wether, 1 year and under 2.

1st—L. Parkinson, Guelph. 3rd—L. Parkinson.
2nd—John S. Gosnell & Sons, Ridgetown.

Grade Wether, under 1 year.

1st—J. Lee & Sons, Highgate. 3rd—John Kelly, Shakespeare.
2nd—J. Lee & Sons.

Pen of Three Grade Wethers, under 1 year.

1st—J. Lee & Sons, Highgate. 2nd—J. Lee & Sons.

LEICESTER SPECIAL PRIZES.

Pen of Three Ewe Lambs, owned and bred by Exhibitor.

(*Open only to exhibitors who have never won a special prize offered by the American Leicester Breeders' Association.*

1st—Adam Thomson, Shakespeare. 2nd—Glaister Bros., Crosshill.

OXFORD SPECIALS.

Yearling Wether.

1st—Peter Arkell & Sons, Teeswater. 3rd—J. A. Cerswell, Bondhead.
2nd—J. W. Lee & Sons, Simcoe.

Lamb Wether.

1st—E. Barbour, Erin. 3rd—J. A. Cerswell.
2nd—J. A. Cerswell, Bondhead.

Pen of Three Wether Lambs.

1st—J. A. Cerswell, Bondhead. 3rd—Jos. Benham, Everton.
2nd—E. Barbour, Erin. 4th—J. W. Lee & Sons, Simcoe.

SHROPSHIRE SPECIALS.

Wether, pure bred, 1 year and under 2.

1st—J. Lloyd-Jones, Burford. 3rd—J. & D. J. Campbell.
2nd—J. & D. J. Campbell, Woodville.

Wether, pure-bred, under 1 year.

1st—J. & D. J. Campbell. 3rd—J. & D. J. Campbell
2nd—J. Lloyd-Jones.

Grade Wether, 1 year and under 2.

1st—J. & D. J. Campbell. 3rd—W. E. Wright, Glanworth.
2nd—O. Rudell, Hespeler.

Grade Wether, under 1 year.

1st—J. Lloyd-Jones, Burford. 3rd—A. Rudell, Hespeler.
2nd—J. & D. J. Campbell.

SOUTHDOWN SPECIALS.

Ewe, under 1 year.

1st—Robert McEwen, Byron. 3rd—Robert McEwen, Byron.
2nd—Geo. Baker, Simcoe.

Pen of Three Ewes, under 1 year.

1st—Robert McEwen. 3rd—Geo. Baker.
2nd—Geo. Baker.

Pen of Three Ewes, under 1 year, get of one ram and bred by exhibitor.

1st—Robert McEwen, Byron. 3rd—Geo. Baker.
2nd—Geo. Baker, Simcoe.

Wether, 1 year and under 2.

1st—J. Lloyd-Jones, Burford. 3rd—Robert McEwen.
2nd—J. Lloyd-Jones.

Wether, under 1 year.

1st—Robert McEwen. 3rd—J. Lloyd-Jones.
2nd—J. Lloyd-Jones.

Pen of Three Wethers, under 1 year.

1st—J. Lloyd-Jones. 3rd—Robert McEwen.
2nd—Geo. Baker.

DORSET HORN SPECIALS.

Wether, 1 year and under 2.

1st—R. H. Harding, Thorndale. 2nd—R. H. Harding.

Wether, under 1 year.

1st—R. H. Harding, Thorndale. 2nd—R. H. Harding.

Ewe, under 1 year.

1st—R. H. Harding. 2nd—John F. Robertson, Milton West.

Best Wether, any age.

1st—R. H. Harding.

Best Wether, 1 year and under 2, shown by resident of Norfolk County. Special

1st—Geo. Baker, Simcoe.

Best Wether, under 1 year, shown by resident of Norfolk County. Special.

1st—Fred Lee, Simcoe.

Best Wether, shown in Sheep Department. Special.

1st—Peter Arkell & Sons, Teeswater.

Best Sheep, shown by Amateur Exhibitor, resident of Lambton County. Special.

1st—J. H. Campbell & Son, Jericho. 2nd—D. A. Graham, Wanstead.

SWINE.

YORKSHIRES.

Barrow, 6 months and under 9. Nine Entries.

1st—R. F. Duck & Son, Port Credit. Rover, March 8th, 1910. Sire, Chancellor, 29267; dam, Lakeview Blossom, 28593.

2nd—Henry Dedels, Breslau. Fred, March 5th, 1910. Sire, Summerhill Royal 3rd, 28516; dam, Summerhill Polly 8th, 21057.
3rd—Jos. Featherston & Son, Streetsville. Pine Grove Conqueror, March 7th, 1910. Sire, Pine Grove Conqueror 4th, 25337; dam, Pine Grove Long Belle, 27524.
4th—R. F. Duck & Son, Port Credit. Sandy, March 8th, 1910. Sire, Chancellor, 29267; dam, Lakeview Blossom, 28593.
5th—Henry Dedels, Breslau. Peter, March 5th, 1910. Sire, Summerhill Royal 3rd, 28516; dam, Summerhill Polly 8th, 21057.

Barrow, under 6 months. Nine Entries.

1st—J. E. Brethour & Nephews, Burford. Oak Lodge Bang, June 12th, 1910. Sire, Oak Lodge Banker; dam, O. L. Princess, 26853.
2nd—J. E. Brethour & Nephews, Burford. Oak Lodge Bang, June 12th, 1910. Sire, Oak Lodge Banker; dam, O. L. Princess, 26853.
3rd—Henry Dedels, Breslau. Bill, June 3rd, 1910. Sire, Summerhill Royal 3rd, 28516; dam, Midge, 31509.
4th—Henry Dedels, Breslau. Jack, June 3rd, 1910. Sire, Summerhill Royal 3rd, 28516; dam, Midge, 31509.

Sow, 9 months and under 15. Ten Entries.

1st—R. F. Duck & Son, Port Credit. Lakeview Viola, 31464, September 28th, 1909.
2nd—Jos. Featherston & Son, Streetsville. Pine Grove Nell 6th, 30625, September 15th, 1909.
3rd—Jos. Featherston & Son, Streetsville. Pine Grove Nell 8th, 31567, September 15th, 1909.
4th—Jos. Featherston & Son, Streetsville. Pine Grove Nell 5th, 30624, September 15th, 1909.
5th—J. E. Brethour & Nephews, Burford. Oak Lodge Princess 101, December 27th, 1909.

Sow, 6 months and under 9. Fourteen Entries.

1st—John Duck, Port Credit. Etobicoke Duchess, 31451, March 10th, 1910.
2nd—R. F. Duck & Son, Port Credit. Lakeview Bell, 31465, March 8th, 1910.
3rd—R. F. Duck & Son, Port Credit. Lakeview Bell 2nd, 31466, March 8th, 1910.
4th—J. E. Brethour & Nephews, Burford. O. L. Cinderella 311, March 1st, 1910.
5th—Jos. Featherston & Son, Streetsville. Pine Grove Long Belle 12th, 31571, March 7th, 1910.

Sow, under 6 months. Sixteen Entries.

1st—Jos. Featherston & Son, Streetsville. Pine Grove Princess 5th, 31568, June 7th, 1910.
2nd—J. E. Brethour & Nephews, Burford. O. L. Princess 98, June 12th, 1910.
3rd—Jos. Featherston & Son, Streetsville. Pine Grove Princess 6th, 31569, June 7th, 1910.
4th—Henry Dedels, Breslau. Pet, 31514, June 3rd, 1910.
5th—Jos. Featherston & Son, Streetsville. Pine Grove Princess 7th, 31570, June 7th, 1910.

Three Pigs of One Litter, bred by Exhibitor. Eight Entries.

1st—R. F. Duck & Son, Port Credit.
2nd—Jos. Featherston & Son, Streetsville.
3rd—Henry Dedels, Breslau.
4th—Jos. Featherston & Son, Streetsville.

BERKSHIRES.

Barrow, 6 months and under 9. Thirteen Entries.

1st—P. J. McEwen, Kertch. Maple Lodge Ben, March 14th, 1910. Sire, Mountain Rob, 19969; dam, Maple Lodge Lady, 17679.
2nd—P. J. McEwen, Kertch. Maple Lodge Dick, March 14th, 1910. Sire, Mountain Rob, 19969; dam, Maple Lodge Lady, 17679.
3rd—S. Dolson & Sons, Norval Station. (————), March 13th, 1910. Sire, Willowdale Doctor, 16819; dam, Cherry Lane Posey, 18515.

4th—John S. Cowan, Donegal. Fairview Lad, March 4th, 1910. Sire, Fairview Victor, 18613; dam, Woodstock Lady, 20154.
5th—P. J. McEwen, Kertch. Maple Lodge Joe, March 14th, 1910. Sire, Mountain Rob, 19969; dam, Maple Lodge Lady, 17679.

Barrow, under 6 months. Eight Entries.

1st—E. Brien & Sons, Ridgetown. Joe, June 24th, 1910. Sire, Concord Star, 19270; dam, Princess, 16828.
2nd—Adam Thomson, Shakespeare. Duke 3rd, June 2nd, 1910. Sire, Duke Royal Duke, 22036; dam, Thomson 1st, 21657.
3rd—P. J. McEwen, Kertch. Maple Lodge Bob, June 3rd, 1910. Sire, Mountain Rob, 19969; dam, Princess 3rd, 15850.
4th—S. J. Lyons, Norval. Rector 1. Sire, Rector, 20453; dam, Snelgrove Bess, 12912.
5th—S. J. Lyons, Norval. Rector 2. Sire, Rector, 20453; dam, Snelgrove Bess, 12912.

Sow, 9 months and under 15. Four Entries.

1st—Adam Thomson, Shakespeare. Sallie, 23510, September 19th, 1909.
2nd—S. Dolson & Sons, Norval Station. Cherry Lane Violet, 22980, September 5th.
3rd—E. Brien & Sons, Ridgetown. Woodburn Winner, 23486, October 28th, 1909.
4th—John S. Cowan, Donegal. Fairview Gem, 24390, December 5th, 1909.

Sow, 6 months and under 9. Sixteen Entries.

1st—John S. Cowan, Donegal. Fairview Gladys, 24392, March 4th, 1910.
2nd—John S. Cowan, Donegal. Fairview Lily, 24391, March 4th, 1910.
3rd—P. J. McEwen, Kertch. Maple Lodge Lady 4th, 24291, March 14th, 1910.
4th—John S. Cowan, Donegal. Fairview Bluebell, 24393, March 4th, 1910.
5th—H. A. Dolson, Alloa. Alloa Fashion, 22988, March 2nd, 1910.

Sow, under 6 months. Twenty Entries.

1st—John S. Cowan, Donegal. Fairview Jenny, 24394, June 2nd, 1910.
2nd—John R. Jackson, Yatton. Primrose, 24397, June 2nd, 1910.
3rd—J. Lawrence, Oxford Centre. Polly 2nd, 24599, June 25th, 1910.
4th—J. Lawrence, Oxford Centre. Polly 3rd, 24600, June 25th, 1910.
5th—J. Lawrence, Oxford Centre. Polly 4th, 24601, June 25th, 1910.

Three Pigs of One Litter, bred by Exhibitor. Ten Entries.

1st—John S. Cowan, Donegal.
2nd—P. J. McEwen, Kertch.
3rd—S. J. Lyons, Norval.
4th—John R. Jackson.

TAMWORTHS.

Barrow, 6 months and under 9. Five Entries.

1st—D. Douglas & Sons, Mitchell. Sambo, April 18th, 1910. Sire, Hilton Golden Star, 5694; dam, Ruth 2nd, 5428.
2nd—Charles Currie, Morriston. Morriston Tom, March 7th, 1910. Sire, College Radiant No. 3, 5787; dam, Morriston Mollie, 6064.
3rd—D. Douglas & Sons, Mitchell. Red Skin, April 17th, 1910. Sire, Hilton Golden Star, 5694; dam, Ruth 2nd, 5428.
4th—D. Douglas & Sons, Mitchell. Rufus, April 17th, 1910. Sire, Hilton Golden Star, 5694; dam, Ruth 2nd, 5428.

Barrow, under 6 months. Five Entries.

1st—D. Douglas & Sons, Mitchell. Tom Longboat, June 15th, 1910. Sire, Maplehurst King, 3904; dam, Queen Ideal, 4859.
2nd—Charles Currie, Morriston. Morriston Jimmy, June 5th, 1910. Sire, College Radiant No. 3, 5787; dam, Morriston Eva, 5743.
3rd—D. Douglas & Sons, Mitchell. Bill, June 15th, 1910. Sire, Maplehurst King, 3904; dam, Queen Ideal, 4859.
4th—D. Douglas & Sons, Mitchell. Bob, June 15th, 1910. Sire, Maplehurst King, 3904; dam, Queen Ideal, 4859.

Sow, 9 months and under 15. Six Entries.

1st—D. Douglas & Sons, Mitchell. Maplehurst Orange Blossom, 6624, September 9th, 1909.
2nd—D. Douglas & Sons, Mitchell. Maplehurst Golden Gleam, 6623, September 9th, 1909.
3rd—Charles Currie, Morriston. Morriston Leah, 6596, September 7th, 1909.
4th—D. Douglas & Sons, Mitchell. Maplehurst Matchless Queen, 6622, September 9th, 1909.

Sow, 6 months and under 9. Six Entries.

1st—D. Douglas & Sons, Mitchell. Maplehurst Mildred, 6616, March 1st, 1910.
2nd—D. Douglas & Sons, Mitchell. Maplehurst Prospect Maid, 6617, March 1st, 1910.
3rd—Charles Currie, Morriston. Morriston Sally, 6599, March, 7th, 1910.
4th—Charles Currie, Morriston. Morriston Susie, 6600, March 7th, 1910.

Sow, under 6 months. Six Entries.

1st—Charles Currie, Morriston. Morriston Maid, 6602, June 5th, 1910.
2nd—D. Douglas & Sons, Mitchell. Maplehurst Royal Princess, 6620, June 15th, 1910.
3rd—D. Douglas & Sons, Mitchell. Maplehurst Viola, 6621, June 15th, 1910.
4th—D. Douglas & Sons, Mitchell. Maplehurst Amelia, 6619, June 15th, 1910.

Three Pigs of One Litter, bred by Exhibitor. Three Entries.

1st—D. Douglas & Sons, Mitchell.
2nd—D. Douglas & Sons, Mitchell.
3rd—Chas. Currie, Morriston.

CHESTER WHITES.

Barrow, 6 months and under 9. Three Entries.

1st—D. DeCourcy, Bornholm. Sam, April 4th, 1910. Sire, Silver Jack, 4341; dam, White Bunty, 3073.
2nd—W. E. Wright, Glanworth. Joe, March 10th, 1910. Sire, Sandy, 5788; dam, Fanny, 3458.
3rd—D. DeCourcy, Bornholm. Sim, April 4th, 1910. Sire, Silver Jack, 4341; dam, White Bunty, 3073.

Barrow, under 6 months. Three Entries.

1st—D. DeCourcy, Bornholm. Ted, June 1st, 1910. Sire, Rizzio, 5321; dam, Model, 5214.
2nd—W. E. Wright, Glanworth. Jack, June 5th, 1910. Sire, Sandy, 5788; dam, Nellie, 5633.
3rd—D. DeCourcy, Bornholm. Tim, June 1st, 1910. Sire, Rizzio, 5321; dam, Model, 5214.

Sow, 9 months and under 15. Three Entries.

1st—D. DeCourcy, Bornholm. White Rose, 8403, October 29th, 1909.
2nd—D. DeCourcy, Bornholm. White Rose, 8405, October 29th, 1909.
3rd—D. DeCourcy, Bornholm. White Rose, 8406, October 29th, 1909.

Sow, 6 months and under 9. Four Entries.

1st—D. DeCourcy, Bornholm. Canadian Queen, 8407, April 4th, 1910.
2nd—W. E. Wright, Glanworth. Beauty, 6591, March 10th, 1910.
3rd—W. E. Wright, Glanworth. Minnie, 6592, March 10th, 1910.

Sow, under 6 months. Three Entries.

1st—D. DeCourcy, Bornholm. Daisy, 8500, June 1st, 1910.
2nd—D. DeCourcy, Bornholm. Daisy, 8501, June 1st, 1910.
3rd—W. E. Wright, Glanworth. Lillie Belle, 6660, June 5th, 1910.

Three Pigs of One Litter, bred by Exhibitor. Two Entries.

1st—D. DeCourcy, Bornholm. 2nd—W. E. Wright, Glanworth.

ANY BREED, GRADE OR CROSS.

Barrow, 6 months and under 9. Nine Entries.

1st—Patrick McGarr, Guelph.
2nd—Chas. Currie, Morriston.
3rd—John Duck, Port Credit.
4th—D. DeCourcy, Bornholm.
5th—W. E. Wright, Glanworth.

Barrow, under 6 months. Nineteen Entries.

1st—John S. Cowan, Donegal.
2nd—D. Douglas & Sons, Mitchell.
3rd—D. Douglas & Sons, Mitchell.
4th—D. DeCourcy, Bornholm.
5th—E. Brien & Son, Ridgetown.
6th—Charles Currie, Morriston.

Sow, 6 months and under 9. Twelve Entries.

1st—John Duck, Port Credit.
2nd—Chas. Currie, Morriston.
3rd—Joseph Featherston & Son, Streetsville.
4th—D. Douglas & Son, Mitchell.
5th—P. J. McEwen, Kertch.
6th—Patrick McGarr, Guelph.

Sow, under 6 months. Eighteen Entries.

1st—Wm. T. Silverthorn, Burford.
2nd—D. Douglas & Sons, Mitchell.
3rd—Chas. Currie, Morriston.
4th—Jos. Featherston & Son, Streetsville.
5th—D. DeCourcy, Bornholm.
6th—Henry Dedels, Breslau.

EXPORT BACON HOGS.

Two Pure-breds. Thirty Entries

1st—J. E. Brethour & Nephews, Burford.
2nd—R. F. Duck, Port Credit.
3rd—James Wilson & Sons, Fergus.
4th—Jos. Featherston & Sons, Streetsville.
5th—D. Douglas & Sons, Mitchell.
6th—H. S. McDiarmid, Fingal.
7th—John Duck, Port Credit.
8th—Henry Dedels, Breslau.
9th—Jos. Featherston & Son.
10th—R. F. Duck, Port Credit.
11th—D. Douglas & Sons, Mitchell.

Two Grades or Crosses. Twenty Entries.

1st—John Duck, Port Credit.
2nd—Jas. Wilson & Sons, Fergus.
3rd—D. Douglas & Sons, Mitchell.
4th—R. F. Duck & Sons, Port Credit.
5th—Henry Dedels, Breslau.
6th—A. E. Hulet, Norwich.
7th—Jos. Featherston & Son, Streetsville.

SWEEPSTAKES, PRINCE OF WALES' PRIZE

Two Best Export Bacon Hogs. (Alive).

1st—J. E. Brethour & Nephews, Burford.

Two Best Carcasses of Export Bacon Hogs.

1st—J. E. Brethour & Nephews, Burford.

DRESSED CARCASSES.

Two Pure-breds. Twenty-four Entries.

1st—J. E. Brethour & Nephews, Burford.
2nd—John Duck, Port Credit.
3rd—R. F. Duck, Port Credit.
4th—J. E. Brethour & Nephews, Burford.
5th—Jas. Wilson & Sons, Fergus.
6th—D. Douglas & Sons Mitchell.
7th—John Duck, Port Credit.
8th—H. S. McDiarmid, Fingal.
9th—R. F. Duck, Port Credit.
10th—James Wilson & Sons, Fergus.
11th—John Duck, Port Credit.

Two Grades or Crosses. Eighteen Entries.

1st—Jas. Wilson & Sons, Fergus.
2nd—Wm. T. Silverthorn, Burford.
3rd—R. F. Duck & Son, Port Credit.
4th—Jos. Featherston & Son, Streetsville.
5th—D. Douglas & Sons, Mitchell.
6th—Wm. Murdock, Palmerston.

SPECIALS.

Best Bacon Hog, shown by Amateur Exhibitor, Resident of County of Brant.

1st—W. T. Silverthorn, Burford.

Best Pen of Two Bacon Hogs, shown by Amateur Exhibitor, Resident of County of Wellington, outside the City of Guelph.

1st—Wm. Murdock, Palmerston.
2nd—Wm. Murdock, Palmerston.

Best Pen of Three Pigs, under Six Months, bred by Exhibitor.

1st—Jos. Featherston & Son, Streetsville.

Best Bacon Hog, shown by Amateur Exhibitor, Resident of the County of Lambton.

1st—P. J. McEwen, Kertch.
2nd—P. J. McEwen, Kertch.

DAIRY TEST AT PROVINCIAL WINTER FAIR, GUELPH, 1910.

Name of Animal and Exhibitor.	Lbs. Milk.	% Fat.	Lbs. Fat.	Lbs. Solids not Fat.	Pts. for Day's Milking.	Points for Fat.	Pts. for Solids not Fat.	Total Points.
Class 40, Sec. 3.—Shorthorn Heifer, under 36 months.								
1st, No award	.....	.....	.....	.....	.....	.....	.....	.....
2nd Graeey Gwynne, 93017, John Kelly, Shakespeare	96.0	3.2	3.072	9.192	1.7	76.8	27.576	106.076
Class 41, Sec. 1.—Ayrshire Cow, 48 months and over.								
1st, Susie of Hickory Hill, 22336, N. Dyment, Hamilton	137.5	4.4	6.05	12.58125	.....	151.25	37.74375	188.99375
2nd, Fairy of Hickory Hill, 24574, N. Dyment	133.2	4.6	6.127	11.5218	.....	153.180	34.5654	187.7454
3rd, Snowdrop of Hickory Hill, 23599. N. Dyment.	152.5	3.6	5.49	14.03	.....	137.25	42.09	179.34
Class 41, Sec. 2.—Ayrshire Cow, 36 months and under 48.								
1st, Scottie's Victoria, 23675, H. & J. McKee, Norwich	131.2	5.1	6.6912	13.1528	.....	167.28	39.4584	206.7384
2nd, Scottie's Nancy, 24265, H. & J. McKee	104.9	4.6	4.8254	10.3326	.....	120.635	30.9978	151.6328
3rd, Cora of Hickory Hill, 24579, N. Dyment, Hamilton	85.8	4.4	3.7752	8.0652	10.	94.38	24.1956	128.5756
Class 41, Sec. 3.—Ayrshire Heifer, under 36 months.								
1st, Scottie's White Rose 2nd, 25688, H. & J. McKee, Norwich	119.5	3.8	4.541	10.69525	1.8	113.525	32.08575	147.41075
2nd, Scottie's Victoria 2nd, 25906, H. & J. McKee	106.4	4.2	4.468	10.1612	1.8	111.72	30.4836	144.0036
3rd, Scottie's Dandy 2nd, 25690, H. & J. McKee	101.5	3.5	3.552	9.5917	.2	88.8125	28.7751	117.7876
4th, Heather Belle of Hickory Hill, N. Dyment, Hamilton	72.8	4.4	3.2032	6.6612	10.	80.08	19.9836	110.0636
Class 42, Sec. 1, Holstein Cow, 48 months and over.								
1st, Idaline Pauline DeKol, 10083, R. J. Kelly, Tillsonburg	232.3	3.3	7.6659	19.39705	.....	191.6475	58.19115	249.83865
2nd, Annie Wedo Mink, 4231, T. H. Dent, Woodstock	213.9	3.6	7.7004	19.0905	.....	192.51	57.2715	249.7815
3rd, Pudmina Hartog DeKol, 12159, H. Bollert, Cassel	205.5	3.5	7.1925	17.77575	.....	179.8125	53.32725	233.13975
4th, Ianthe Jewel Mechthilde 3rd, 3530, M. L. Haley, Springford	184.6	3.95	7.2917	16.68322	2.2	182.2925	50.04966	234.54216
5th, Allie DeKol Aberkirk, 12758, H. Bollert.	196.4	3.75	7.365	17.74965	.....	184.125	53.24895	237.37395
6th, Arcano Albino DeKol, 6180, C. E. Smith, Scotland	192.0	3.15	6.048	17.4912	.4	151.2	52.4736	204.0736
7th, Pride Marguerite 2nd, 7432, M. H. Haley, Springford	156.9	3.5	5.4915	14.2386	1.7	137.2875	42.71601	181.70351
Class 42, Sec. 2.—Holstein Cow, 36 months and under 48.								
1st, Calamity Starlight Butter Girl, 10065, M. H. Haley, Springford	176.9	5.5	9.7295	16.14212	.7	243.2375	48.4263	291.4263
2nd, Spinks Butter Girl, 8635, H. F. Patterson, Alford Jet	186.4	4.	7.456	16.9158	.....	186.4	50.7474	237.1474
3rd, Maple Grove Tidy Pauline, 9019, H. Bollert, Cassel	153.3	4.7	7.2051	14.90842	.....	180.125	44.72526	224.85026
4th, Bessie Spink Calothilde DeKol, 9315, M. L. Haley, Springford	155.6	4.0	6.224	13.3038	.....	155.6	39.9114	195.5114
5th, Pauline Colanthus Poseh, 8784, A. H. Hulet, Norwich	143.8	3.3	4.7454	13.48125	6.5	118.635	40.44375	165.57875

Class 42, Sec. 3.—Holstein Heifer, under 36 months.								
1st, Dot of Elmwood, 10046, R. J. Kelly, Tillsonburg	186.1	3.45	6.42045	16.5815	.....	160.5112	49.7445	210.25575
2nd, Madam Posch Pauline, 10291, A. E. Hulet, Norwich	180.8	3.5	6.328	17.0404	.....	158.20	51.1212	209.3212
3rd, Mercena Artalissa, 9987, M. H. Haley, Springford	145.4	4.2	6.1068	13.5949	3.	152.67	40.7848	196.4547
4th, Nellie Posch, 9990, M. H. Haley	142.0	4.1	5.822	13.3125	.....	145.55	39.9375	185.4875
5th, Acme Albino Acme, 9360, C. E. Smith, Scotland	178.0	2.8	4.984	16.554	.....	124.6	49.662	174.262
6th, Tiny, 10900, M. H. Haley	147.3	3.5	5.1555	13.5516	2.8	128.8875	40.6548	172.3423
7th, Homewood Queen, 9382, M. L. Haley, Springford	108.8	4.3	4.6784	10.4992	.....	116.96	31.4976	148.4576
Class 43, Sec. 1.—Jersey Cow, 48 months and over.								
1st, Brampton Blue Fly, 300, B. H. Bull & Son, Brampton	116.9	5.0	5.845	11.5146	2.2	146.15	34.5438	182.8938
2nd, Aristocrat Fanny, 1188, B. H. Bull & Son	124.7	4.85	6.04795	11.85897	3.6	151.19875	35.57691	190.37566
3rd, Nina of Springbank, 162203, T. H. Dent, Woodstock	114.5	4.8	5.496	11.19237	.....	137.40	33.57711	170.97711
Class 43, Sec. 2.—Jersey Cow, 36 months and under 48.								
1st, Brampton Orange, 1157, B. H. Bull & Son, Brampton	98.8	4.8	4.7424	9.60336	2.1	118.56	28.81008	149.47008
Class 43, Sec. 3.—Jersey Heifer, under 36 months.								
1st, Brampton Fountain Rose, 221716, B. H. Bull & Son, Brampton	71.5	6.	4.29	7.2715	9.6	107.25	21.8145	138.6645
2nd, Brampton Lady George, 1132, B. H. Bull & Son	86.8	4.1	3.5588	8.1809	10.	88.97	24.5427	123.5127
Class 45, Sec. 1.—Grade Cow, 48 months and over.								
1st, Francis, T. H. Dent, Woodstock, Ont.	150.6	4.1	6.1746	13.5163	.....	154.365	40.54905	194.91405
2nd, Lassie, H. G. Benfield, Woodstock	118.2	4.65	5.4963	10.8885	10.	137.4075	32.6657	180.07324
Class 45, Sec. 2.—Grade Cow, 36 months and under 48.								
1st, Mary, C. E. Smith, Scotland	184.2	3.4	6.2628	16.3938	3.5	156.57	49.1814	209.2514
2nd, Jane, T. H. Dent, Woodstock	167.1	3.55	5.9320	14.933	.....	148.301	44.8011	193.102
3rd, Duchess, H. G. Benfield, Woodstock	134.8	3.8	5.1224	12.8734	3.3	128.06	38.6202	169.9802

JUDGING COMPETITION.

Horses.

1st—M. C. Herner,	O.A.C., Guelph.	6th—J. C. Steckley,	O.A.C., Guelph.
2nd—B. H. Landels,	" "	7th—T. O. Clark,	" "
3rd—C. S. Shibley,	" "	8th—W. B. Finnie,	" "
4th—J. G. Taggart,	" "	9th—C. W. Buchanan,	" "
5th—R. L. Rutherford,	" "	10th—J. P. Sackville,	" "

Beef Cattle.

1st—F. Marcellus,	O.A.C., Guelph.	6th—A. J. Shantz,	" "
2nd—P. S. D. Harding,	" "	7th—H. Cook,	" "
3rd—C. L. Smith,	" "	8th—O. McConkey	" "
4th—R. Austin,	" "	9th—G. L. Honey,	" "
5th—E. Bradt,	" "	**10th—L. C. Adair,**	" "

Dairy Cattle.

1st—E. A. Puleston,	O.A.C., Guelph.	6th—R. S. Beckett,	O.A.C., Guelph.
2nd—H. M. King,	" "	7th—C. W. Buchanan,	" "
3rd—L. C. Adair,	" "	8th—K. Stairs,	" "
4th—W. Dawson,	" "	9th—D. C. Halliday,	" "
5th—J. S. Dunlop,	" "	10th—A. Fleming,	" "

Sheep.

1st—J. C. Steckley,	O.A.C., Guelph.	6th—R. Shortill,	O.A.C., Guelph.
2nd—A. Clapp,	" "	7th—J. Rettie,	" "
3rd—Henry Parkinson,	Guelph.	8th—C. Main,	" "
4th—J. Grange,	O.A.C., Guelph.	9th—G. Wallace,	" "
5th—A. M. Bosman,	" "	10th—J. S. Dunlop,	" "

Swine.

1st—W. H. J. Tisdale,	O.A.C., Guelph.	6th—J. W. Stark,	O.A.C., Guelph.
2nd—W. Jeffrey,	" "	7th—G. L. Jarvis,	" "
3rd—W. B. Finnie,	" "	8th—J. Kyona,	"
4th—E. A. Whaley,	" "	9th—J. E. Iwanimi,	"
5th—G. A. Burns		10th—R. L. Vining,	" "

SEEDS.

Fall Wheat, Any White Variety. Nine Entries.

1st—Walter Hartman, Clarksburg.
2nd—F. A. Legge, Jefferson.
3rd—Lyman Kennedy & Sons, Agincourt.
4th—Alex. McKague, Teeswater.
5th—N. P. Schmidt, Mildmay.

Fall Wheat, Any Red or Amber Variety. Five Entries.

1st—Isaac T. Knight, Arkell.
2nd—Walter Hartman, Clarksburg.
3rd—Andrew Schmidt, Mildmay.
4th—Alex. Hall, Ayr.
5th—J. M. Fischer, Mildmay.

Spring Wheat, Any Variety. Five Entries.

1st—A. R. Wood, Fergus.
2nd—Walter Hartman, Clarksburg.
3rd—N. P. Schmidt, Mildmay.

Goose Wheat. Four Entries.

1st—A. R. Wood, Fergus.
2nd—Thos. B. Lush, Barrie Hill.
3rd—G. W. Blyth, Marden.

Oats, Any White Variety. Eighteen Entries.

1st—Alex. Hall, Ayr.
2nd—Jno. A. Cockburn, Aberfoyle.
3rd—Jno. McDiarmid, Lucknow.
4th—Andrew Schmidt, Mildmay.
5th—Wm. Lewis, Dunsford.

Oats, Any Black Variety. Four Entries.

1st—N. P. Schmidt, Mildmay.
2nd—Thos. B. Lush, Barrie Hill.
3rd—Andrew Schmidt, Mildmay.
4th—Leonard D. Hankinson, Grovesend.

Barley, Any Six-Rowed Variety. Twelve Entries.

1st—J. M. Fischer, Mildmay.
2nd—Andrew Schmidt, Mildmay.
3rd—N. P. Schmidt, Mildmay.
4th—John Hunter & Son, Wyoming.

Field Peas, Any Large Variety. Two Entries.

1st—Jacob Lerch, Mildmay.
2nd—W. W. Ramage, Thistle.

Field Peas, Any Small Variety. Four Entries.

1st—Peter McLaren, Hillsburg.
2nd—Jacob Lerch, Mildmay.
3rd—Herman L. Goltz, Bardsville.

Beans, Any Field Variety. Five Entries.

1st—F. W. Scott, Highgate.
2nd—Elljah Armstrong, Aberfeldy.
3rd—John S. Gosnell & Sons, Ridgetown.
4th—Geo. E. Foster, Honeywood.

Red Clover. Six Entries.

1st—J. A. Fletcher, Valetta.
2nd—Wm. S. Mills, Valetta.
3rd—J. E. Brethour & Nephews, Burford.
4th—R. J. Robertson, Onondaga.

Alsike. Three Entries.

1st—J. A. Fletcher, Valetta.
2nd—Wm. S. Mills, Valetta.
3rd—Duncan Carmichael, West Lorne.

Timothy. Two Entries.

1st—S. A. Northcott, Taunton.

Potatoes, Long White Type. Eight Entries.

1st—Herman L. Goltz, Bardsville
2nd—Wm. Naismith, Falkenburg.
3rd—Alfred Hutchison, Mt. Forest.
4th—A. R. Wood, Fergus.

Potatoes, Round White Type. Twelve Entries.

1st—Herman L. Goltz, Bardsville.
2nd—Wm. Naismith, Falkenburg.
3rd—F. W. Krouse, Guelph.
4th—Elijah Armstrong, Aberfeldy.
5th—G. A. Burns, Ayr.

Potatoes, Other than White. Nine Entries.

1st—A. R. Wood, Fergus
2nd—J. M. Fischer, Mildmay.
3rd—Herman L. Goltz, Bardsville.
4th—John Forsyth, Jr., Eberts.
5th.—Scanlon Bros. Fergus.

Corn, Best ten ears, Any Eight-Rowed Variety Flint. Eight Entries.

1st—S. A. Northcott, Taunton
2nd—Leonard D. Hankinson, Grovesend.
3rd—Robert Thompson, St. Catharines
4th—John S. Gosnell & Sons, Ridgetown.

Corn, Best ten ears, Any Twelve-Rowed Variety Flint. Nine Entries.

1st—E. D. Smith, Ridgetown
2nd—Arch. Carmichael, West Lorne.
3rd—Arch. Maccoll, Aldboro.
4th—Robert Fletcher, Valetta.
5th—Duncan Carmichael, West Lorne.

Corn, Best ten ears, Any Dent Variety. (W.C.Y. Dent included). Twelve Entries.

1st—J. A. Fletcher, Valetta.
2nd—Leonard Baker, Valetta.
3rd—J. F. Fletcher, Valetta.
4th—Fred Makins, Valetta.

Corn, Best ten ears, Any Dent Variety, Yellow. Eight Entries.

1st—Wm. Woodbridge, Kingsville.
2nd—J. F. Fletcher, Valetta.
3rd—Wm. S. Mills, Valetta.
4th—G. W. Coatsworth & Son, Kingsville.

Corn, Sweet. Three Entries.

1st—J. O. Duke, Ruthven.
2nd—Arch. Maccoll, Aldboro.

Best Bushel Alsike Clover Seed. Special.

1st—J. A. Fletcher, Valetta.

Special Prizes of the Canadian Seed Growers' Association.

Fall Wheat, Group Exhibits. Two Entries.

1st—C. R. Gies, Heidelburg.
2nd—Herbert Davidson, Mt. Nemo.

Spring Wheat, Exhibits of Hand-selected Plants. One Entry.

1st—N. P. Schmidt, Mildmay.

Spring Wheat, Any Variety, Group Exhibits. Two Entries.

1st—Walter Hartman, Clarksburg.
2nd—Robert McKay, Maxville.

Oats, Any White Variety, Exhibits of Hand-selected Plants. Three Entries.

1st—T. J. Shepley, Ouvry.
2nd—N. P. Schmidt, Mildmay.
3rd—J. A. Fletcher, Valetta.

Oats, Any White Variety, Group Exhibits. Seven Entries.

1st—Duncan Carmichael, West Lorne.
2nd—W. W. Ramage, Thistle.
3rd—Wm. Lewis, Dunsford.
4th—Jno. Hunter & Son, Wyoming.

Barley, Any Six-Rowed Variety, Exhibits of Hand-selected Plants. Five Entries.

1st—Wm. Lewis Dunford.
2nd—N. P. Schmidt, Mildmay.

Barley, Any Six-rowed Variety, Group Exhibits. Three Entries.

1st—Duncan Carmichael, West Lorne.
2nd—Walter Hartman, Clarksburg.
3rd—C. R. Gies, Heidelburg.

Corn, Best Ten Ears, Any Eight Rowed Variety Flint. White or Yellow. Four Entries.

1st—Robert Thompson, St. Catharines.
2nd—Leonard D. Hankinson, Grovesend.
3rd—Arch. Maccoll, Aldboro.

Corn, Best Ten Ears, Any Twelve Rowed Variety Flint. White or Yellow. Seven Entries.

1st—E. D. Smith, Ridgetown.
2nd—Arch. Maccoll, Aldboro.
3rd—Arch. Carmichael, West Lorne.
4th—J. A. Fletcher, Valetta.

Corn, Best Ten Ears, Any Variety White Dent, (W.C.Y. Dent included). Four Entries.

1st—John Hunter & Sons, Wyoming. 2nd—Jos. C. Thomas, Blytheswood.

Corn, Best Ten Ears, Any Variety, Yellow Dent. Seven Entries.

1st—Wm. Woodbridge, Kingsville. 4th—John P. Pearce, Staples.
2nd—G. W. Coatsworth & Son, Kingsville.
3rd—T. J. Shepley, Ouvry.

Corn, Best Ten Ears, Any Variety, Sweet, Late. Two Entries.

1st—H. & J. McKee, Norwich.

Corn, Best Ten Ears, Any Variety, Sweet, Early. Four Entries.

1st—Chas. Pearce, Wellington. 3rd—J. O. Duke, Ruthven.
2nd—L. A. Sovereign, Round Plains.

Potatoes, Round White Type from Hand-Selected Seed Plot. Four Entries.

1st—F .W. Krouse, Guelph. 2nd—Robert Canning, Hagerman.

Potatoes, Long White Type, from Hand-Selected Seed Plot. Two Entries.

1st—Alfred Hutchison, Mt. Forest. 2nd—F. W. Krouse, Guelph.

Potatoes, Rose Type, from Hand-Selected Seed Plot. One Entry.

1st—F. W. Krouse, Guelph.

Wheat, Any Spring Variety, Exhibits of Hand-Selected Plants. One Entry. (Open only to Beginners).

1st—A. R. Wood, Fergus.

Oats, Any White Variety, Exhibits of Hand Selected Plants. Two Entries. (Open only to Beginners).

1st—Andrew Schmidt, Mildmay. 3rd—Isaac T. Knight, Arkell.

Barley, Any Six-Rowed Variety, Exhibits of Hand-Selected Plants. Two Entries. (Open only to Beginners).

1st—John Hunter & Son, Wyoming. 3rd—Andrew Schmidt, Mildmay.

Corn, Best Ten Ears, Any variety White Dent, (W.C.Y. Dent included), Exhibits of Hand-Selected Plants. Two Entries. (Open only to Beginners).

1st—Walter Thompson, Dresden. 2nd—Leonard D. Hankinson, Grovesend.

Corn, Best Ten Ears, Any variety Yellow Dent, Exhibits of Hand selected Plants. (Open only to Beginners). Three Entries.

1st—J. A. Fletcher, Valetta. 3rd—Walter Thompson, Dresden.
2nd—G. W. Coatsworth & Son, Kingsville.

Corn, Best Ten Ears, Any Variety, Sweet, Late, Exhibits of Hand Selected Plants. (Open only to Beginners). One Entry.

1st—Thos. Affleck, Kingsville.

Corn, Best Ten Ears, Any Variety, Sweet, Early, Exhibits of Hand Selected Plants. (Open only to Beginners.) Two Entries.

1st—Andrew Schmidt, Mildmay. 2nd—Walter Thompson, Dresden.

Potatoes, Round White Type, from Hand-Selected Seed Plot. (Open only to Beginners). Five Entries.

1st—Wm. Naismith, Falkenburg. 3rd—Alfred Hutchison, Mt. Forest.
2nd—Herman L. Goltz, Bardsville. 4th—Isaac T. Knight, Arkell.

Potatoes, Long White Type, from Hand-selected Seed Plot. (Open only to Beginners). Four Entries.

1st—Wm. Naismith, Falkenburg. 3rd—A. R. Wood, Fergus.
2nd—Herman L. Goltz, Bardsville. 4th—Isaac T. Knight, Arkell.

Potatoes, Rose Type, from Hand-selected Seed Plot. (Open only to Beginners). Three Entries.

1st—Herman L. Goltz, Bardsville. 3rd—Isaac T. Knight, Arkell
2nd—Wm. Naismith, Falkenburg.

Corn, Best Exhibit of twenty-five Ears Dent, Any variety, grown in Ontario in 1910. Special.

1st—Wm. Woodbridge, Kingsville.

Corn, Best Exhibit of Twenty-five Ears Flint, grown in Ontario in 1910. Special.

1st—Leonard D. Hankinson, Grovesend.

Sweepstakes, Special for member making the most creditable showing of selected Seed for the whole Exhibition.

1st—Duncan Carmichael, West Lorne.

POULTRY.

List Gives Number of Entries and Winners in Each Section.

For Post Office Addresses of Winners see List of Members of the Western Ontario Poultry Association, Appendix, pages 310-317.

Light Brahmas.

Cocks, 11.—1st and 3rd, H. W. Partlo; 2nd, C. H. Wilson,
Hens, 9.—1st, 2nd and 3rd, H. W. Partlo.
Cockerels, 12.—1st and 2nd, H. W. Partlo; 3rd, L. C. Howell; 4th, Douglas T. Taylor.
Pullets, 12.—1st and 3rd, Douglas T. Taylor; 2nd L. C. Howell; 4th, H. W. Partlo.

Dark Brahmas.

Cocks, 3.—1st and 2nd, L. C. Sage; 3rd, C. A. R. Tilt.
Hens, 5—1st and 2nd, L. C. Sage; 3rd, C. H. Wilson.
Cockerels, 5.—1st and 2nd, L. C. Sage; 3rd, C. A. R. Tilt.
Pullets, 9.—1st and 3rd, C. H. Wilson; 2nd, L. C. Sage.

Buff Cochins.

Cocks, 5.—1st, Holmhurst Poultry Yards; 2nd, Hugh Wyatt; 3rd, Hugh A. Rose.
Hens, 10.—1st and 3rd, Holmhurst Poultry Yards; 2nd, Hugh A. Rose.
Cockerels, 8.—1st Holmhurst Poultry Yards; 2nd and 3rd, Hugh Wyatt.
Pullets, 11.—1st and 2nd, Holmhurst Poultry Yards; 3rd, Hugh A. Rose.

Partridge Cochins.

Cocks, 7.—1st, Hugh A. Rose; 2nd, Jas. Pettit; 3rd, F. Wales.
Hens, 7.—1st, 2nd and 3rd, A. E. Shether.
Cockerels, 5.—1st and 3rd, Hugh A. Rose; 2nd F. Wales.
Pullets, 7.—1st and 2nd, Hugh O. Rose; 3rd, A. E. Shether.

Black Cochins.

Cocks, 2.—1st, C. A. R. Tilt; 2nd, P. A. McIntosh.
Hens, 3.—1st and 2nd, C. A. R. Tilt; 3rd, P. A. McIntosh.
Cockerels, 2.—1st, C. A. R. Tilt; 2nd, P. A. McIntosh.
Pullets, 2.—1st, C. A. R. Tilt; 2nd, P. A. McIntosh.

White Cochins.

Cocks, 5.—1st, Hugh A. Rose; 2nd, David Bogue; 3rd, Harry T. Lush.
Hens, 6.—1st, 2nd and 3rd, Hugh A. Rose.
Cockerels, 3.—1st and 2nd, Hugh A. Rose.
Pullets, 4.—1st, 2nd and 3rd, Hugh A. Rose.

Black Lanoshans.

Cocks, 4.—1st, C. A. R. Tilt; 2nd, R. McCurdy; 3rd, R. McCurdy.
Hens, 4.—1st, C. A. R. Tilt; 2nd and 3rd, R. McCurdy.
Cockerels, 7.—1st and 2nd, C. A. R. Tilt; 3rd, R. McCurdy.
Pullets, 6.—1st, C. A. R. Tilt; 2nd, R. McCurdy; 3rd, A. S. Hamilton.

A. O. C. Langshans.

Cocks, 4.—1st, W. J. Teale; 2nd and 3rd, Wm. Pearson.
Hens, 4.—1st, W. J. Teale; 2nd, Wm. Pearson; 3rd, George Burn.
Cockerels, 5.—1st, Wm. Pearson; 2nd, Geo. Burn; 3rd, W. J. Teale.
Pullets, 5.—1st, Geo. Burn; 2nd, W. J. Teale; 3rd, Wm. Pearson.

Barred Plymouth Rocks.

Cocks, 21.—1st, John Pringle; 2nd and 3rd, I. K. Millard; 4th, G. Morton; 5th, Hodge and McLuckie.

Hens, 22.—1st, 3rd and 5th, I. K. Millard; 2nd, John Pringle; 4th, Thomas Andrew.

Cockerels, 47.—1st, 3rd, 5th, 6th and 7th, I. K. Millard; 2nd, John Pringle; 4th, Thos. T. Winstanley; 8th, John Gormley; 9th, Hubert Thorne; 10th, G. Morton.

Pullets, 40.—1st, 3rd and 4th, I. K. Millard; 2nd, John Gormley; 5th, Hodge and McLuckie; 6th and 7th, John Pringle; 8th, Thos. Holmes; 9th, Geo. Morton; 10th, Thos. Andrew.

White Plymouth Rocks.

Cocks, 31.—1st and 5th, C. J. Whitney; 2nd, B. H. Gilbert; 3rd, J. L. Brown; 4th, G. A. Robertson; 6th, R. Holman; 7th, and 9th, Fred A. Andrews; 8th, Jas. McPherson; 10th, Jas. W. Shields.

Hens, 33.—1st, 7th and 9th, J. L. Brown; 2nd and 6th, C. J. Whitney; 3rd, Geo Rohertson; 4th, Harry C. Pettit; 5th, B. H. Gilbert; 8th, R. Holman; 10th, W. E. Pantler.

Cockerels, 30.—1st, Fred A. Andrews; 2nd, C. J. Whitney; 3rd, B. H. Gilbert; 4th, Geo. Robertson; 5th, 6th and 10th, J. L. Brown; 7th, Frank C. Dulmage; 8th, R. Holman; 9th, C. J. Whitney.

Pullets, 27.—1st and 3rd, J. L. Brown; 2nd, C. J. Whitney; 4th, Geo. Burgess; 5th, Frank C. Dulmage.

Buff Plymouth Rocks.

Cocks, 4.—1st, John Bawden; 2nd, Underwood & Campbell; 3rd, A. C. Bricker and Dr. McDowell.

Hens, 6.—1st and 3rd, John Bawden; 2nd, A. C. Bricker & Dr. McDowell.

Cockerels, 9.—1st, John Bawden; 2nd and 3rd, Underwood & Campbell.

Pullets, 11.—1st, John Bawden; 2nd and 3rd, Underwood & Campbell.

GOLDEN LACED WYANDOTTES.

Cocks, 10.—1st and 2nd, Robert Patterson; 3rd, Wm. Daniel & Fenn.
Hens, 10.—1st, Wm. Daniel and Fenn; 2nd, John McPherson; 3rd, Claude Hughes.
Cockerels, 15,—1st, Claude Hughes; 2nd and 3rd, W. A. Becker; 4th, R. H. Saunders.
Pullets, 22,—1st and 2nd, R. H. Saunders; 3rd, Robert Patterson; 4th and 5th, Jas. Baptie.

SILVER-LACED WYANDOTTES.

Cocks, 6.—1st, Peep O'Day Poultry Farm; 2nd, Wilber Lemon; 3rd, Jas. Arthur.
Hens, 8.—1st and 2nd and 3rd, Wilbur Lemon.
Cockerels, 16.—1st, Alfred Flawn; 2nd, Peep O'Day Poultry Farm; 3rd, Wilber Lemon.
Pullets, 18.—1st and 2nd, Alfred Flawn; 3rd and 4th, Jas. Arthur.

BLACK WYANDOTTES.

Cocks, 3.—1st and 2nd, Hugh A. Rose; 3rd, A. & T. Readwin.
Hens, 6.—1st and 3rd, A. & T. Readwin; 2nd, Hugh A. Rose.
Cockerels, 3.—1st and 2nd, Hugh A. Rose.
Pullets, 7.—1st, A. G. H. Luxton; 2nd and 3rd, Hugh A. Rose.

BUFF WYANDOTTES.

Cocks, 7.—1st, Jas. Dundas 2nd, Spry & Mick; 3rd, R. Holman.
Hens, 10.—1st and 3rd, R. Holman; 2nd, Philip Berduse.
Cockerels, 11.—1st and 2nd, Durand & Shields; 3rd, Spry & Mick.
Pullets, 15.—1st and 4th, Spry & Mick; 2nd, Alf. H. Cox; 3rd, Durand & Shields.

SILVER-PENCILLED WYANDOTTES.

Cocks, 6.—1st, Robert Patterson; 2nd, Walter Turnbull; 3rd, J. R. Bailey.
Hens, 7.—1st, Geo. Bnrrows; 2nd, Robert Patterson; 3rd, C. Schelter.
Cockerels, 5.—1st and 2nd, Robert Patterson; 3rd, Geo. Burrows.
Pullets, 8.—1st, A. H. Switzer; 2nd, Geo. Burrows; 3rd, J. R. Bailey.

WHITE WYANDOTTES.

Cocks, 32.—1st, 3rd and 7th, Russell Farm; 2nd, Wm. Wilson; 4th, Wm. Arnold; 5th and 9th, W. Dawson; 6th, R. W. Vout; 8th, Wm. Archer; 10th, Wm. J. Pickerell.
Hens, 38.—1st, 3rd and 5th, Russell Farm; 2nd, 7th and 8th, Russell Farm; 4th, R. W. Vout; 6th and 9th, W. Dawson; 10th, Wm. Wilson.
Cockerels, 56.—1st, 2nd and 5th, W. Dawson; 3rd, 4th, 6th and 10th, Russell Farm; 7th, Sid Saunders; 8th, R. W. Vout; 9th, W. Howard.
Pullets, 58.—1st, W. Dawson; 2nd and 7th, Russell Farm; 3rd, 4th and 6th, R. W. Vout; 5th and 10th, Sid Saunders; 8th, Wm. Archer; 9th, Wm. Arnold.

PARTRIDGE WYANDOTTES.

Cocks, 9.—1st, Frank Glass; 2nd, J. R. Johnson; 3rd, McCutcheon & Hedden.
Hens, 19.—1st, 2nd and 3rd, Adams Bros.; 4th, Pfaff & Loehr.
Cockerels, 14.—1st, Adams Bros.; 2nd, McCutcheon & Hedden; 3rd, Frank Glass; 4th, J. R. Johnson.
Pullets, 16.—1st, McCutcheon & Hedden; 2nd and 4th, Adams Bros.; 3rd, Ald. S. Rundle.

COLUMBIAN WYANDOTTES.

Cocks, 7.—1st, S. J. Schelly; 2nd, H. W. Partlo; 3rd, T. H. Scott.
Hens, 7.—1st, S. J. Schelly; 2nd, T. H. Scott; 3rd, H. W. Partlo.
Cockerels, 13.—1st, 2nd, 3rd and 4th, S. J. Schelly.
Pullets, 15.—1st, H. W. Partlo; 2nd, 3rd and 4th, S. J. Schelly.

DOMINIQUES.

Cocks, 3.—1st, G. B. Carbert; 2nd, Geo. Burn; 3rd, A. G. H. Luxton.
Hens, 3.—1st, G. B. Carbet; 2nd, Geo. Burn.
Cockerels, 2.—1st, A. G. H. Luxton.
Pullets, 2.—1st, G. B. Carbert.

Black Javas.

Cocks, 4.—1st, J. E. Peart; 2nd, T. J. Cole; 3rd, F. W. Krouse.
Hens, 4.—1st, T. J. Cole; 2nd, J. E. Peart; 3rd, F. W. Krouse.
Cockerels, 7.—1st, Jack Philpot; 2nd, Galt E. Brown; 3rd, J. E. Peart.
Pullets, 6.—1st, J. E. Peart; 2nd, Galt E. Brown; 3rd, Richard Oke.

Mottled Javas.

Cocks, 1.—1st, G. & J. Bogue.
Hens, 3.—1st and 3rd, G. & J. Bogue; 2nd, Richard Oke.
Cockerels, 2.—1st, Richard Oke; 2nd, G. & J. Bogue.
Pullets, 2.—1st, G. & J. Bogue; 2nd, Richard Oke.

S. C. Rhode Island Reds.

Cocks, 14.—1st and 4th, Hughes & Taylor; 2nd, T. A. Faulds; 3rd, Gunn, Langlois Co.

Hens, 16.—1st and 2nd, T. A. Faulds; 3rd, J. E. Klager; 4th, Hughes & Taylor.

Cockerels, 44.—1st, C. Vogt; 2nd, Hughes & Taylor; 3rd, Russell Farm; 4th, Gunn, Langlois Co.; 5th, J. E. Klager; 6th and 10th, Wm. J. Mihm; 7th, John Crawford & Sons; 8th, T. A. Faulds; 9th, G. L. Garrett.

Pullets, 39.—1st and 6th, John Bradley; 2nd, Hughes & Taylor; 3rd, 8th, 9th and 10th, T. A. Faulds; 4th, Wm. J. Mihm; 5th and 7th, J. H. Eyer.

R. C. Rhode Island Reds.

Cocks, 17.—1st, S. Charlton; 2nd, John Luscomb; 3rd, Howard B. Smith; 4th, Hughes & Taylor.

Hens, 15.—1st, C. J. Daniels; 2nd, S. Charlton; 3rd, C. Vogt; 4th, John Luscombe.

Cockerels, 23.—1st, 3rd and 4th, S. Charlton; 2nd, C. J. Daniels; 5th, Hughes & Taylor.

Pullets, 26.—1st, Hughes & Taylor; 2nd, S. Charlton; 3rd, J. & A. Bowling; 4th, C. Vogt; 5th, John Luscombe.

Black Red Games.

Cocks, 4.—1st, S. Stapleford; 2nd, W. J. Elliott; 3rd, W. Barber.
Hens, 6.—1st, J. W. Roberts; 2nd, Jas. Morley; 3rd, St. Stapleford.
Cockerels, 10.—1st, W. J. James, 2nd, S. Stapleford.
Pullets, 11.—1st, 2nd and 3rd, Jas. Morley.

Brown Red Games.

Cocks, 3.—1st and 3rd, W. Barber; 2nd, W. J. Elliott.
Hens, 5.—1st and 3rd, W. J. Elliott; 2nd, W. Barber.
Cockerels, 2.—1st and 2nd. W. Barber.
Pullets, 4.—1st and 2nd, W. Barber; 3rd, Jos. Telfer.

Duckwing Games.

Cocks, 3.—1st and 2nd, W. Barber; 3rd, Jos. Telfer.
Hens, 3.—1st and 2nd, W. Barber; 3rd, Jos. Telfer.
Cockerels, 4.—1st and 3rd, W. Barber; 2nd, Jos. Telfer.
Pullets, 4.—1st and 2nd, W. Barber; 3rd, Jos. Telfer.

Pyle Games.

Cocks, 5.—1st, John Parkinson; 2nd, W. J. Elliott; 3rd, Frank Cook & Son.
Hens, 7.—1st and 2nd, John Parkinson; 3rd, Frank Cook & Son.
Cockerels, 6.—1st, 2nd and 3rd, John Parkinson.
Pullets, 7.—1st, 2nd and 3rd, John Parkinson.

Indian Games, Any Variety.

Cocks, 10.—1st, N. Topping; 2nd, Will Casey; 3rd, Finchamp & Routledge.

Hens, 13.—1st, N. Topping, 2nd, Will Casey; 3rd, Finchamp & Routledge; 4th, John Crawford & Sons.

Cockerels, 20.—1st, 2nd and 4th, Nixon Bros.; 3rd, N. Topping; 5th, Finchamp & Routledge.

Pullets, 20.—1st and 2nd, Nixon Bros.; 3rd, Finchamp & Routledge; 4th, Will Casey; 5th, John Crawford & Sons.

Black Sumatra Games.

Cocks, 5.—1st, J. H. Warrington; 2nd, L. Tozer; 3rd, C. J. Daniels.
Hens, 5.—1st, Galt E. Brown; 2nd, J. H. Warrington; 3rd, C. J. Daniels.
Cockerels, 7.—1st, L. Tozer; 2nd, Jos. Houden; 3rd, J. H. Warrington.
Pullets, 7.—1st and 3rd, L. Tozer; 2nd, Jos. Houden.

Birchen Games.

Cocks, 2.—1st, W. Barber; 2nd, Jos. Telfer.
Hens, 2.—1st, W. Barber; 2nd, Jos. Telfer.
Cockerels, 3.—1st and 2nd, W. Barber; 3rd, Jos. Telfer.
Pullets, 3.—1st and 2nd, W. Barber; 3rd, Jos. Telfer.

A. O. V. Games.

Cocks, 14.—1st, W. J. Teale; 2nd, R. H. Barber; 3rd, A. L. Schario; 4th, R. Holman.
Hens, 10.—1st, R. H. Barber; 2nd, G. B. Carbert; 3rd, A. L. Schario.
Cockerels, 7.—1st, Thos. Bickle; 2nd and 3rd, R. H. Barber.
Pullets, 9.—1st, A. L. Schario; 2nd, R. H. Barber; 3rd, G. B. Carbert.

R. C. White Leghorns.

Cocks, 7.—1st and 2nd, I. K. Martin; 3rd, H. Thorn.
Hens, 7.—1st, 2nd and 3rd, I. K. Martin.
Cockerels, 11.—1st, 2nd and 3rd, I. K. Martin.
Pullets, 11.—1st, 2nd and 3rd, I. K. Martin.

S. C. White Leghorns.

Cocks, 21.—1st and 3rd, Wm. Ferguson; 2nd and 4th, F. Wales; 5th, Jas. L. McCormack.

Hens, 34.—1st and 3rd, Durst Bros.; 2nd, A. H. McLean; 4th, Wm. Ferguson; 5th and 7th, F. Wales; 6th, C. H. Greensides; 8th, Jas. L. McCormack; 9th, W. O. Robertson; 10th, John Holloran.

Cockerels, 61.—1st, 2nd and 3rd, Wm. Ferguson; 4th, 5th and 10th, F. Wales; 6th and 8th, C. H. Greensides; 9th, J. Harrison; 7th, E. Syer.

Pullets, 59.—1st, 4th and 5th, F. Wales; 2nd, J. L. McCormack; 3rd, 6th, 7th and 10th, Wm. Ferguson; 8th, Durst Bros.; 9th, Horn & Trotter.

Black Leghorns.

Cocks, 13,—1st, J. Meldrum; 2nd, A. & T. Readwin; 3rd, John A. Belford; 4th, A. E. Doan.

Hens, 15—1st, J. Meldrum; 2nd & 3rd, A. E. Doan; 4th, A. H. Switzer.

Cockerels, 22—1st, A. H. Switzer; 2nd and 4th, F. H. Gallinger; 3rd, Wm. J. McLeod; 5th, A. E. Doan.

Pullets, 21.—1st, 2nd and 3rd, F. H. Gallinger; 4th, Jas. Meldrum; 5th, John A. Belford.

R. C. Brown Leghorns.

Cocks, 7—1st and 2nd, C. H. Wilson; 3rd, Henderson & Billings.
Hens, 8—1st and 2nd, Wm. W. Cadman; 3rd, Henderson & Billings.
Cockerels, 11—1st and 3rd, C. H. Wilson; 2nd, Henderson & Billings.
Pullets, 13—1st and 3rd, Wm. W. Cadman; 2nd, C. H. Wilson; 4th, Henderson & Billings.

S. C. Brown Leghorns.

Cocks, 22—1st, Peter Scott; 2nd, J. G. Taylor; 3rd, Jacob Streib; 4th and 5th, G. G. Henderson.

Hens, 22—1st, Orr & Creeden; 2nd, J. G. Taylor; 3rd and 4th, Jacob Streib; 5th, H. F. Becker.

Cockerels, 42—1st, J. G. Taylor; 2nd and 5th, Orr and Creeden; 3rd and 4th, Peter Scott; 6th, 7th and 8th, H. F. Becker; 9th, G. G. Henderson; 10th, T. H. Scott.

Pullets, 37—1st, 4th, 5th, 7th and 10th, Orr & Creeden; 2nd, W. A. Gurney; 3rd, Jacob Streib; 6th, F. H. Becker, 8th, Wm. W. Cadman; 9th, J. G. Taylor.

Buff Leghorns.

Cocks, 9—1st, C. H. Tovell; 2nd and 3rd, R. B. Graham.
Hens, 9—1st, 2nd and 3rd, R. B. Graham.
Cockerels, 14.—1st, 2nd 3rd and 4th, R. B. Graham.
Pullets, 12.—1st, 2nd, 3rd and 4th, R. B. Graham.

Silver Duckwing Leghorns.

Cocks, 3—1st and 2nd, M. R. Milroy.
Hens, 5—1st, A. J. George; 2nd and 3rd, M. R. Milroy.
Cockerels, 3—1st, Geo. Burn; 2nd and 3rd, A. J. George.
Pullets, 3—1st, M. R. Milroy; 2nd and 3rd, A. J. George.

Spanish.

Cocks, 4—1st, Chas. F. Rice; 2nd and 3rd, Jas. Snetsinger.
Hens, 4—1st, J. H. Warrington; 2nd, Jas. Snetsinger; 3rd, Chas. F. Rice.
Cockerels, 5—1st, David Lippert; 2nd, Geo. W. Whetham.
Pullets, 4—1st and 2nd, Chas. F. Rice; 3rd, Jas. Snetsinger.

S. C. Black Minorcas.

Cocks, 12—1st, T. A. Faulds; 2nd, R. Smith & R. Alben; 3rd, Wm. Ellis; 4th, Fred D. King.
Hens, 19—1st and 3rd, R. J. Teskey; 2nd, T. A. Foulds; 4th, G. C. Cook.
Cockerels, 36.—1st and 4th, T. A. Faulds; 2nd, A. C. Moyer; 3rd and 6th, G. C. Cook; 5th, R. J. Teskey; 7th, 8th and 10th, A. Goebel; 9th, Wm. Nickle.
Pullets, 36—1st, 8th and 9th, T. A. Faulds; 2nd and 4th, G. C. Cook; 3rd and 5th, A. Goebel; 6th and 7th, Chas. Gorvett, 10th, R. J. Teskey.

R. C. Black Minorcas.

Cocks, 9.—1st, Ross Swartout; 2nd, Dr. J. N. MacRae; 3rd, T. A. Faulds.
Hens, 13—1st, Dr. J. N. MacRae; 2nd, T. A. Faulds; 3rd, Ross Swartout; 4th, B. J. Mountjoy.
Cockerels, 25—1st, Dr. J. N. MacRae; 2nd and 4th, T. A. Faulds; 3rd and 5th, Ross Swartout.
Pullets, 18—1st and 4th, T. A. Faulds; 2nd, Ross Swartout; 3rd, Dr. J. N. MacRae.

White Minorcas.

Cocks, 3—1st, A. C. Moyer; 2nd, J. C. Read; 3rd, Thos. Vickers.
Hens, 4—1st, Thos. Vickers; 2nd, J. C. Read; 3rd, A. C. Moyer.
Cockerels, 6.—1st and 2nd, J. C. Read; 3rd, A. C. Moyer.
Pullets, 6—1st and 2nd, A. C. Moyer; 3rd, J. C. Read.

Andalusians.

Cocks, 5—1st, Baker, Bros.; 2nd, C. D. Worthington; 3rd, A. H. Switzer.
Hens, 13—1st, Grier Bros.; 2nd, A. H. Switzer; 3rd, C. D. Worthington; 4th, Chas. Gorvett.
Cockerels, 9—1st, David Logan; 2nd, A. H. Switzer; 3rd, Thos. H. King.
Pullets, 10—1st and 3rd. David Logan; 2nd, A. H. Switzer.

Anconas.

Cocks, 5—1st, A. C. McCulloch; 2nd and 3rd, Peter B. Becker.
Hens, 8—1st and 2nd, J. McDowell; 3rd, David Lippert.
Cockerels, 8—1st, Peter B. Becker; 2nd and 3rd, A. C. McCulloch.
Pullets, 7—1st, J. McDowell; 2nd and 3rd, Peter B. Becker.

Silver Grey Dorkings.

Cocks, 7—1st, Jas. M. McCormack; 2nd, E. E. McCombs; 3rd, G. A. Burns.
Hens, 10.—1st, E. E. McCombs; 2nd, Jas. M. McCormack; 3rd, G. A. Burns.
Cockerels, 8—1st, Harry H. McKee; 2nd, G. A. Burns; 3rd, Roswell Goldie.
Pullets, 9—1st, Jas. M. McCormack; 2nd, Roswell Goldie; 3rd, G. A. Burns.

Colored Dorkings.

Cocks, 3—1st, J. H. Warrington; Jas. Baptie; 3rd, Jas. M. McCormack.
Hens, 5—1st and 2nd, Jas. M. McCormack; 3rd, J. H. Warrington.
Cockerels 4—1st, David Bogue; 2nd, J. H. Warrington; 3rd, G. & J. Bogue.
Pullets, 4—1st, G. & J. Bogue; 2nd, Jas. M. McCormack; 3rd, J. H. Warrington.

White Dorkings.

Cocks, 4.—1st and 2nd, David Bogue; 3rd, J. H. Warrington.
Hens, 3—1st, J. H. Warrington; 2nd, David Bogue; 3rd, A. E. Doan.
Cockerels, 3—1st, J. H. Warrington; 2nd, David Bague; 3rd, A. E. Doan.
Pullets, 3—1st, J. H. Warrington; 2nd, David Bogue; 3rd, Fred D. King.

Buff Orpingtons.

Cocks, 13—1st and 2nd, J. W. Clark; 3rd, E. Wicks & Son; 4th, H. A. Hoffman.
Hens, 15—1st and 2nd, J. W. Clark; 3rd, Hugh A. Scott; 4th, H. A. Hoffman.
Cockerels, 28—1st, 2nd and 5th, J. W. Clark; 3rd, H. A. Hoffman; 4th, Geo. W. Clarkson.
Pullets, 30.—1st, 4th and 7th, J. W. Clark; 2nd, F. J. Ferguson; 3rd, 6th and 8th, H. A. Hoffman; 5th, E. Wicks & Son; 9th, Harry T. Lush; 10th, R. Holman.

Black Orpingtons.

Cocks, 16—1st, E. Fraleigh; 2nd, Geo. A. Jameson; 3rd and 4th, Kemp & Waterman.
Hens, 24—1st, E. Fraleigh, 2nd, Hamilton & Scoyne; 3rd, Kemp and Waterman; 4th and 5th, Geo. A. Jameson.
Cockerels, 38—1st, 8th and 9th, Geo. A. Jameson; 2nd, 3rd and 10th, E. Fraleigh; 4th, Kemp & Waterman; 5th and 7th, H. F. Vidal; 6th, Hamilton & Scoyne.
Pullets, 49—1st and 8th, E. Fraleigh; 2nd, 3rd and 5th, Hamilton & Scoyne; 4th, Kemp & Waterman; 6th, W. J. Elliott; 7th, F. K. Ferguson; 9th and 10th, H. F. Vidal.

White Orpingtons.

Cocks, 11.—1st, Wm. Moore; 2nd, A. H. Westman; 3rd, Peter Dill.
Hens, 19—1st, 2nd and 4th, F. H. J. Moore; 3rd, Wm. Moore.
Cockerels, 25—1st, 3rd and 4th, Wm. Moore; 2nd, Wm. Wilson; 5th, A. H. Westman.
Pullets, 28—1st, 3rd and 4th, Wm. Wilson; 2nd and 5th, F. H. J. Moore.

Houdans.

Cocks, 10—1st, E. O. Penwarden; 2nd, W. Phenix; 3rd, G. & J. Bogue.
Hens, 13—1st, G. & J. Bogue; 2nd, W. Phenix; 3rd E. O. Penwarden; 4th, Horn & Trotter.
Cockerels, 11—1st, C. Day; 2nd, W. Phenix; 3rd, E. O. Penwarden.
Pullets, 12 —1st and 2nd, Horn & Trotter; 3rd, C. Day; 4th, G. & J. Bogue.

Creve Coeurs.

Cocks, 2.—1st and 2nd, G. & J. Bogue.
Hens, 3.—1st and 3rd, G. & J. Bogue; 2nd, J. H. Warrington.
Cockerels, 2—1st and 2nd, G. & J. Bogue.
Pullets, 2—1st and 2nd, G. & J. Bogue.

La Fleche.

Cocks, 4—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington.
Hens, 4—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington.
Cockerels, 5—1st, W. M. Smith; 2nd and 3rd, G. & J. Bogue.
Pullets, 4—1st and 2nd, Richard Oke; 3rd, G. & J. Bogue.

W. C. B. Polands.

Cocks, 3.—1st and 2nd, Wm. McNeil; 3rd, Galt E. Brown.
Hens, 3.—1st and 2nd, Wm. McNeil; 3rd, Galt E. Brown.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, W. O. Robertson.
Pullets, 2—1st and 2nd, Wm. McNeil.

Golden Polands.

Cocks, 3.—1st and 3rd, G. & J. Bogue; 2nd, Wm. McNeil.
Hens, 2.—1st. G. & J. Bogue; 2nd, Wm. McNeil.
Cockerels, 3—1st and 2nd, G. & J. Bogue; 3rd, Wm. McNeil.
Pullets, 4.—1st, Wm. McNeil; 2nd and 3rd, G. & J. Bogue.

Silver Polands.

Cocks, 1.—1st, Wm. McNeil.
Hens, 2—1st, G. & J. Bogue; 2nd, Wm. McNeil.
Cockerels, 3.—1st, Wm. McNeil; 2nd, G. & J. Bogue; 3rd, C. H. Wilson.
Pullets, 4.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.

White Polands.

Cocks, 2.—1st and 2nd, Wm. McNeil.
Hens, 2.—1st and 2nd, Wm. McNeil.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, P. A. McIntosh.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, P. A. McIntosh.

Golden Bearded Polands.

Cocks, 3.—1st, Galt E. Brown; 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Hens, 4—1st and 2nd, G. & J. Bogue; 3rd, Wm. McNeil.
Cockerels, 4.—1st, Wm. McNeil; 2nd and 3rd, G. & J. Bogue.
Pullets, 4.—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.

Silver Bearded Polands.

Cocks, 3.—1st, Wm. McNeil; 2nd, Galt E. Brown.
Hens, 5.—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Cockerels, 3.—1st, Wm. McNeil 2nd, G. & J. Bogue; 3rd, C. H. Wilson.
Pullets, 4.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.

White Bearded Polands.

Cocks, 2.—1st and 2nd, Wm. McNeil.
Hens, 3—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Pullets, 2.—1st and 2nd, Wm. McNeil.

Buff Laced Bearded Polands.

Cocks, 3.—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Hens, 4.—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Cockerels, 3.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Pullets, 3—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

Golden Spangled Hamburgs.

Cocks, 6—1st and 3rd, Jas. Baptie; 2nd, Harry T. Lush.
Hens, 8.—1st, 2nd and 3rd, Jas. Baptie.
Cockerels, 7.—1st, Samuel C. Spies; 2nd, Richard Oke; 3rd, Jas. Baptie.
Pullets, 11.—1st, R. Oke; 2nd and 3rd, Jas. Baptie.

Silver Spangled Hamburgs.

Cocks, 8.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, Jas. Baptie.
Hens, 13.—1st, R. Oke; 2nd and 4th, Harry T. Lush; 3rd, S. C. Spies.
Cockerels, 10.—1st, S. C. Spies; 2nd, R. Oke; 3rd, Jas. Baptie.
Pullets, 16.—1st and 3rd, Jas. Baptie; 2nd, R. Oke; 4th, Harry T. Lush.

Golden Pencilled Hamburgs

Cocks, 3.—1st, R. Oke; 2nd, Galt E. Brown.
Hens, 3.—1st and 2nd, R. Oke; 3rd, G. & J. Bogue.
Cockerels, 5.—1st and 2nd, R. Oke; 3rd, G. & J. Bogue.
Pullets, 4.—1st and 2nd, R. Oke; 3rd, Galt E. Brown.

Silver Pencilled Hamburgs.

Cocks, 3.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, W. C. Mills.
Hens, 4.—1st, R. Oke; 2nd, W. C. Mills; 3rd, Galt E. Brown.
Cockerels, 7.—1st and 3rd, R. Oke; 2nd, G. & J. Bogue.
Pullets, 6.—1st and 3rd, R. Oke; 2nd, G. & J. Bogue.

Black Hamburgs.

Cocks, 11.—1st, Jas. Baptie; 2nd and 3rd, R. Billings.
Hens, 12.—1st, R. L. Wheadon; 2nd, R. Oke; 3rd, R. Billings; 4th, A. E. Doan.
Cockerels, 11.—1st, Harry T. Lush; 2nd, R. L. Wheadon; 3rd, Fred D. King.
Pullets, 13.—1st, 2nd and 4th, R. L. Wheadon; 3rd, Harry T. Lush.

Red Caps.

Cocks, 5.—1st and 3rd, Geo. W. Kinder; 2nd, David Lippert.
Hens, 4.—1st, P. A. McIntosh; 2nd and 3rd, Geo. W. Kinder.
Cockerels, 8.—1st, R. G. Carroll; 2nd, J. C. Powney; 3rd, Geo. W. Kinder.
Pullets, 8.—1st, R. G. Carroll; 2nd, J. C. Powney; 3rd, Geo. W. Kinder.

Silkies.

Cocks, 2.—1st and 2nd, E. Saunders.
Hens, 2.—1st and 2nd, E. Saunders.
Cockerels, 3.—1st and 2nd, E. Saunders; 3rd, Galt E. Brown.
Pullets, 3.—1st and 2nd, E. Saunders; 3rd, Galt E. Brown.

A. O. V. Fowl.

Cocks, 7.—1st, Wm. McNeil; 2nd, A. O'Neil & Son; 3rd, Grier Bros.
Hens, 7.—1st, Wm. McNeil; 2nd, Ed. Bleiler; 3rd, A. O'Neil & Son.
Cockerels, 15.—1st, Wm. McNeil, 2nd, Grier Bros.; 3rd, J. H. Karn, 4th, A. O'Neil & Son.
Pullets, 15.—1st, Wm. McNeil; 2nd, Ed. Bleiler; 3rd, B. J. Mountjoy; 4th, A. O'Neil & Son.

Black Red Game Bantams.

Cocks, 12.—1st and 4th, W. R. Walker; 2nd, Chas. R. Crowe; 3rd, W. Barber.
Hens, 17.—1st, 2nd and 4th, Chas. R. Crowe; 3rd, W. Barber.
Cockerels, 14.—1st, C. R. Crowe; 2nd and 4th, W. R. Walker; 3rd, Al. Robinson
Pullets, 23—1st, C. R. Crowe; 2nd, W. R. Walker; 3rd, Rooke Bros.; 4th and 5th, Al. Robinson.

Brown Red Game Bantams.

Cocks, 6.—1st, A. H. Trebilcock; 2nd, Rooke Bros.; 3rd, A. J. Grigg.
Hens, 8.—1st, A H Trebilcock; 2nd and 3rd, A. W. Tyson.
Cockerels, 7.—1st, A. W. Tyson; 2nd, Rooke Bros.; 3rd, A. H. Trebilcock.
Pullets, 9.—1st, A. H. Trebilcock; 2nd and 3rd, A. W. Tyson.

Golden Duckwing Game Bantams.

Cocks, 3.—1st and 3rd, Wm. Pearson; 2nd, W. Barber.
Hens, 5.—1st and 2nd, W. Barber; 3rd, Rooke Bros.
Cockerels, 5—1st, W. Howard; 2nd, W. Barber; 3rd, A. J. Grigg.
Pullets, 8.—1st, Wm. Pearson; 2nd, A. J. Grigg; 3rd, W. Barber.

Silver Duckwing Game Bantams.

Cocks, 5.—1st, Wm. Pearson; 2nd, W. Howard; 3rd, A. J. Grigg.
Hens, 5.—1st, W. Howard; 2nd and 3rd, W. Barber.
Cockerels, 5.—1st, Thos. Bower; 2nd, W. Howard; 3rd, Rooke Bros.
Pullets, 7.—1st, W. Howard; 2nd, Rooke Bros.; 3rd, Wm. Pearson.

Pyle Game Bantams.

Cocks, 12.—1st, John Crowe; 2nd, A. W. Tyson; 3rd and 4th, Thos. Bower.
Hens, 12.—1st, John Crowe; 2nd and 3rd, Thos. Bower, 4th, A. W. Tyson.
Cockerels, 17.—1st, Thos. Bower; 2nd and 4th, A. H. Trebilcock; 3rd, John Crowe.
Pullets, 19.—1st, 3rd and 4th, Thos. Bower; 2nd, John Crowe.

White Game Bantams.

Cocks, 3.—1st, 2nd and 3rd, H. B. Donovan.
Hens, 4.—1st, 2nd and 3rd, H. B. Donovan.
Cockerels, 4.—1st, Wm. Pearson; 2nd and 3rd, H. B. Donovan.
Pullets, 4.—1st and 2nd, H. B. Donovan; 3rd, Wm. Pearson.

Birchen Game Bantams.

Cocks, 3.—1st and 2nd, Wm. Pearson; 3rd, Rooke Bros.
Hens, 3.—1st, Rooke Bros.; 2nd and 3rd, Wm. Pearson.
Cockerels, 4.—1st and 2nd, Wm. Pearson; 3rd, Rooke Bros.
Pullets, 5.—1st and 3rd, Wm. Pearson; 2nd, Rooke Bros.

Indian Game Bantams.

Cocks, 4.—1st, T. J. Kiley; 2nd, Geo. Burn; 3rd, H. B. Donovan.
Hens, 4.—1st, Doidge and McNeil; 2nd, T. J. Kiley; 3rd, Geo. Burn.
Cockerels, 2.—1st and 2nd, Doidge and McNeil.
Pullets, 2.—1st and 2nd, Doidge and McNeil.

A. O. V. Game Bantam.

Cocks, 3—1st and 3rd, H. B. Donovan.
Hens, 6.—1st, Chas. R. Crowe; 2nd, H. B. Donovan; 3rd, T. J. Kiley.
Cockerels, 4.—1st, H. B. Donovan; 2nd, T. J. Kiley; 3rd, H. B. Donovan.
Pullets, 7.—1st, Rooke Bros.; 2nd, T. J. Kiley; 3rd, H. B. Donovan.

Golden Sebright Bantams.

Cocks, 4.—1st, 2nd and 3rd, Hugh A. Rose.
Hens, 4.—1st, 2nd and 3rd, Hugh a Rose.
Cockerels, 4.—1st, 2nd and 3rd, Hugh A. Rose.
Pullets 4—1st, 2nd and 3rd, Hugh A. Rose.

Silver Sebright Bantams.

Cocks, 5.—1st and 3rd, Hugh A. Rose; 2nd, Spiars Bros.
Hens 6—1st Spiars Bros.; 2nd, Wm. Stuart; 3rd, Hugh A. Rose.
Cockerels, 6.—1st, 2nd and 3rd, Hugh A. Rose.
Pullets, 5.—1st, 2nd and 3rd, Hugh A. Rose.

Black Rose Comb Bantams.

Cocks, 5.—1st, Richard Oke; 2nd and 3rd, R. L. Wheadon.
Hens, 8.—1st, Hugh A. Rose; 2nd, R. L. Wheadon; 3rd, R. Oke.
Cockerels, 14.—1st, R. Oke; 2nd, Hugh A. Rose; 3rd, R. L. Wheadon; 4th, Daniel McCahill.
Pullets, 15.—1st, R. Oke; 2nd, 3rd and 4th, Daniel McCahill.

White Rose Comb Bantams.

Cocks, 3.—1st, R. Oke; 2nd and 3rd, Spiars Bros.
Hens, 3.—1st, Spiars Bros.; 2nd and 3rd, R. Oke.
Cockerels, 2.—1st and 2nd, R. Oke.
Pullets, 2.—1st and 2nd, R. Oke.

White Cochin Bantams.

Cocks, 5.—1st, Rosser Bros.; 2nd and 3rd, Doidge & McNeil.
Hens, 7.—1st, Rosser Bros.; 2nd and 3rd, Doidge & McNeil.
Cockerels, 5.—1st, 2nd and 3rd, Doidge & McNeil.
Pullets, 6.—1st, 2nd and 3rd, Doidge & McNeil.

Buff Cochin Bantams.

Cocks, 4.—1st and 2nd, Rosser Bros.; 3rd, Jas. Pettit.
Hens, 5.—1st and 2nd, Rosser Bros.; 3rd, Jas. Pettit.
Cockerels, 8.—1st, Jas. Pettit; 2nd, C. A. R. Tilt; 3rd, Rosser Bros.
Pullets, 7.—1st, Rosser Bros.; 2nd, Dr. C. R. Cumming; 3rd, Jas. Pettit.

Black Cochin Bantams.

Cocks, 11.—1st, Dr. J. N. MacRae; 2nd, Jas. W. Blain; 3rd, Baker Bros.
Hens, 13.—1st and 3rd, Howard Fraleigh; 2nd, J. A. Northey; 4th, Dr. J. N. MacRae.
Cockerels, 12.—1st and 2nd, Dr. J. N. MacRae; 3rd and 4th, Dr. C. R. Cumming.
Pullets, 17.—1st and 4th, Dr. J. N. MacRae; 2nd, Dr. C. R. Cumming; 3rd, J. A. Northey.

Partridge Cochin Bantams.

Cocks, 3.—1st, L. A. Brill; 2nd, Rosser Bros.; 3rd, L. Tozer.
Hens, 3.—1st, L. A. Brill, 2nd, Rosser Bros.; 3rd, L. Tozer.
Cockerels, 4.—1st and 2nd, L. Tozer; 3rd, Rosser Bros.
Pullets, 5.—1st and 3rd, Rosser Bros.; 2nd, L. Tozer.

Plain White Booted Bantams.

Cocks, 4.—1st and 2nd, R. Oke; 3rd, T. J. Kiley.
Hens, 4.—1st, R. Oke; 2nd and 3rd, T. J. Kiley.
Cockerels, 4.—1st and 2nd, T. J. Kiley; 3rd, R. Oke.
Pullets, 4.—1st and 2nd, T. J. Kiley; 3rd, R. Oke.

Bearded White Booted Bantams.

Cocks, 2.—1st, R. Oke; 2nd, T. J. Kiley.
Hens, 3.—1st, T. J. Kiley; 2nd, R. Oke.
Cockerels, 2.—1st and 2nd, T. J. Kiley.
Pullets.—1st and 2nd, T. J. Kiley; 3rd, R. Oke.

Black Tailed Japanese Bantams.

Cocks, 2.—1st, R. Oke; 2nd, J. & A. Bowling.
Hens, 3.—1st and 2nd, R. Oke; 3rd, J. & A. Bowling.
Cockerels, 1.—1st, R. Oke.
Pullets, 2.—1st and 2nd, R. Oke.

White Japanese Bantams.

Cocks, 1.—1st, Jas. Farley.
Hens, 3.—1st and 2nd, R. Oke; 3rd, Jas. Farley.
Cockerels, 1.—1st, Jas. Farley.
Pullets, 2.—1st, R. Oke; 2nd, Jas. Farley.

Black Japanese Bantams.

Hens, 1.—1st, Richard Oke.
Cockerels, 1.—1st, Richard Oke.
Pullets, 1.—1st, R. Oke.

A. O. V. Japanese Bantams.

Cocks, 1.—1st, R. Oke.
Hens, 1.—1st, Richard Oke.

WHITE POLISH BEARDED BANTAMS.

Cocks, 6.—1st and 3rd, Hugh A. Rose; 2nd, T. J. Kiley.
Hens, 4.—1st and 3rd, T. J. Kiley; 2nd, Hugh A. Rose.
Cockerels, 6.—1st and 2nd, T. J. Kiley; 3rd, Hugh A. Rose.
Pullets, 6.—1st and 2nd, Hugh A. Rose; 3rd, T. J. Kiley.

WHITE POLISH UNBEARDED BANTAMS.

Cocks, 2.—1st and 2nd, H. B. Donovan.
Hens, 2.—1st and 2nd, H. B. Donovan.
Cockerels, 3.—1st and 2nd, Hugh A. Rose; 3rd, H. B. Donovan.
Pullets, 4.—1st, 2nd and 3rd, Hugh A. Rose.

LIGHT BRAHMA BANTAMS.

Cocks, 9.—1st, R. T. Dickie; 2nd, Shaw & McIntosh; 3rd, L. C. Howell.
Hens, 13.—1st, 2nd 3rd and 4th, Shaw & McIntosh.
Cockerels, 14.—1st and 2nd, Shaw & McIntosh; 3rd, H. W. Partlo; 4th, Jack Hewitt.
Pullets, 14.—1st, H. W. Partlo; 2nd, 3rd and 4th, Shaw & McIntosh.

DARK BRAHMA BANTAMS.

Cocks, 2.—1st, L. A. Brill; 2nd, H. B. Donovan.
Hens, 4.—1st and 2nd, Hugh A. Rose; 3rd, L. A. Brill.
Cockerels, 2.—1st and 2nd, Hugh A Rose.
Pullets, 2.—1st and 2nd, Hugh A. Rose.

A. O. V. BANTAMS.

Hens, 2.—1st and 2nd, H. B. Donovan.
Cockerels, 1.—1st, H. B. Donovan.
Pullets, 2.—1st and 2nd, H. B. Donovan.

BRONZE TURKEYS (*Two Years and Up*).

Cocks, 7.—1st, A. McDougall & Son; 2nd, Chas. Gould; 3rd, T. J. Cole; 4th, W. J. Bell; 5th, F. B. Garnsey.
Hens, 7.—1st, A. McDougall & Son; 2nd and 3rd, F. B. Garnsey; 4th, W. J. Bell; 5th, R. Holman.

BRONZE TURKEYS (*Under Two Years*).

Cocks, 13.—1st, Ed. Halliday; 2nd and 4th, W. J. Bell; 3rd, Jas. Snetsinger; 5th, Chas. Gould.
Hens, 12.—1st and 3rd, W. J. Bell; 2nd and 4th, Jas. Snetsinger; 5th, Thos. Worrod.
Cockerels, 15.—1st and 3rd, F. B. Garnsey; 2nd, Ed. Halliday; 4th, A. McDougall & Son; 5th, Chas. Gould.
Pullets, 14.—1st, Chas. Gould; 2nd, F. B. Garnsey; 3rd and 5th, W. J. Bell; 4th, Jas. Snetsinger.

WHITE TURKEYS.

Cocks, 7.—1st, Geo. Baker; 2nd, Baker Bros.; 3rd, A. McDougall & Son; 4th, Philip Berduse; 5th, W. M. Smith.
Hens, 9.—1st and 4th, Baker Bros.; 2nd, Geo. Baker; 3rd, F. Wales; 5th, T. J. Cole.
Cockerels, 9.—1st, T. J. Cole; 2nd, Geo. Baker; 3rd, Philip Berduse; 4th, Baker Bros.; 5th, W. M. Smith.
Pullets, 10.—1st and 5th, Jos. Telfer; 2nd and 3rd, Baker Bros.; 4th, W. M. Smith.

A. O. V. TURKEYS.

Cocks, 6.—1st, A. McDougall & Son; 2nd, Henry Wilson; 3rd, Jos. Telfer; 4th, A. G. H. Luxton; 5th, W. J. Alexander.
Hens, 7.—1st, A. McDougall & Son; 2nd and 3rd, Henry Wilson; 4th, A. G. H. Luxton; 5th, W. J. Alexander.
Cockerels, 7.—1st, A. McDougall & Son; 2nd, Jos. Telfer; 3rd and 4th, A. G. H. Luxton; 5th, Henry Wilson.
Pullets, 6.—1st, Jos. Telfer; 2nd, W. J. Alexander; 3rd, Henry Wilson.

Toulouse Geese.

Ganders. 16.—1st, Baker Bros.; 2nd, T. J. Cole; 3rd, Jas. McCormack; 4th, Philip Berduse.
Geese, 12.—1st Scanlon Bros.; 2nd, D. Douglas & Son; 3rd, A. G. H. Luxton; 4th, T. J. Cole.
Ganders, 1910, 12.—1st, Baker Bros.; 2nd, A. McDougall & Son; 3rd, Thos. M. Shea; 4th, D. Douglas & Son.
Geese, 1910, 13.—1st, Scanlon Bros.; 2nd, A. McDougall & Son; 3rd and 4th, D. Douglas & Son.

Embden Geese.

Ganders, 7.—1st, Baker Bros.; 2nd, A. McDougall & Son; 3rd, C. A. R. Tilt; 4th, Scanlon Bros.
Geese, 7.—1st, A. McDougall & Son; 2nd, A. G. H. Luxton; 3rd, Scanlon Bros.; 4th, Alfred C. Crane.
Ganders. 1910, 9.—1st and 3rd, Scanlon Bros.; 2nd, Alfred C. Crane; 4th C. A. R. Tilt.
Geese, 1910, 8.—1st, Scanlon Bros; 2nd, Alfred C. Crane; 3rd, T. J. Cole; 4th, C. A. R. Tilt.

Brown Chinese Geese.

Ganders, 3.—1st, Geo. Burn; 2nd, A. G. H. Luxton; 3rd, W. M. Smith.
Geese, 3.—1st, Geo. Burn; 2nd, A. G. H. Luxton; 3rd, C. A. R. Tilt.
Ganders. 1910, 2.—1st, A. G. H. Luxton; 2nd, Geo. Burn.
Geese, 1910, 2.—1st, A. G. H. Luxton.

White Chinese Geese.

Ganders. 4.—1st and 2nd, J. J. Pearson; 3rd, T. J. Cole.
Geese, 4.—1st and 2nd, J. J. Pearson; 3rd, T. J. Cole.
Ganders, 1910, 4.—1st, J. J. Pearson; 2nd, T. J. Cole; A. G. H. Luxton.
Geese, 1910, 4.—1st, T. J. Cole; 2nd, J. J. Pearson; 3rd, A. G. H. Luxton.

African Geese.

Ganders, 5.—1st and 2nd, C. A. R. Tilt; 3rd, T. J. Cole.
Geese, 5.—1st, C. A. R. Tilt; 2nd, Baker Bros.; 3rd, T. J. Cole.
Ganders, 1910, 10.— 1st and 3rd, Thos. M. Shea; 2nd, Baker Bros.
Geese, 1910, 11.—1st, Baker Bros.; 2nd, C. A. R. Tilt; 3rd, Bert Wismer.

A. O. V. Geese.

Ganders, 4.—1st, Geo. Burn; 2nd, A. G. H. Luxton; 3rd, P. A. McIntosh.
Geese, 4.—1st, Geo. Burn; 2nd, Isaac T. Knight; 3rd, P. A. McIntosh.
Ganders. 1910. 2.—1st, Isaac T. Knight; 2nd, A G. H. Luxton.
Geese, 1910, 2—1st, Isaac T. Knight; 2nd, A. G. H. Luxton.

Aylesbury Ducks.

Drakes, 3.—1st, G. & J. Bogue; 2nd, T. J. Cole; 3rd, A. G. H. Luxton.
Ducks, 4.—1st, G. & J. Bogue; 2nd, T. J. Cole.
Drakes, 1910, 5.—1st, C. A. R. Tilt; 2nd, T. J. Cole; 3rd, G. & J. Bogue.
Ducks, 1910, 5.—1st, C. A. R. Tilt; 2nd, T. J. Cole; 3rd, G. & J. Bogue.

Rouen Ducks.

Drakes, 8.—1st, Thos. M. Shea; 2nd, Baker Bros.; 3rd, G. & J. Bogue.
Ducks, 8.—1st and 2nd, G. & J. Bogue; 3rd, Baker Bros.
Drakes, 1910, 10.—1st and 2nd, Baker Bros.; 3rd, G. & J. Bogue.
Ducks, 1910, 11.—1st and 3rd, G. & J. Bogue; 2nd, Baker Bros.

Pekin Ducks.

Drakes, 8.—1st and 2nd, C. A. R. Tilt; 3rd, D. Douglas & Sons.
Ducks, 9.—1st and 2nd, C. A. R. Tilt; 3rd, D. Douglas & Sons.
Drakes, 1910, 12.—1st and 2nd, C. A. R. Tilt; 3rd and 4th, D. Douglas & Sons.
Ducks, 1910, 12.—1st and 4th, D. Douglas & Sons; 2nd and 3rd, C. A. R. Tilt.

INDIAN RUNNER DUCKS.

Drakes, 4.—1st, E. E. McCombs; 2nd, S. D. Furminger; 3rd, T. J. Cole.
Ducks, 6.—1st, 2nd and 3rd, E. E. McCombs.
Drakes, 1910, 12.—1st, 2nd and 3rd, E. E. McCombs; 4th, S. D. Furminger.
Ducks, 1910, 12.—1st and 2nd, E. E. McCombs; 3rd, A. H. Switzer; 4th, C. A. R. Tilt.

CAYUGA DUCKS.

Drakes, 4.—1st and 3rd, Baker Bros.; 2nd, C. A. R. Tilt.
Ducks, 4.—1st and 2nd, Baker Bros.; 3rd, C. A. R. Tilt.
Drakes, 1910, 3.—1st and 2nd, Baker Bros.; 3rd, A. G. H. Luxton.
Ducks, 1910, 4.—1st and 3rd, Baker Bros.; 2nd, C. A. R. Tilt.

MUSCOVY DUCKS.

Drakes, 4.—1st and 2nd, Isaac T. Knight; 3rd, Geo. Burn.
Ducks, 3.—1st, Philip Berduse; 2nd, Isaac T. Knight; 3rd, Geo. Burn.
Drakes, 1910, 4.—1st, Philip Berduse; 2nd, Geo. Burn; 3rd, Isaac T. Knight.
Ducks, 1910, 4.—1st, Philip Berduse; 2nd, Isaac T. Knight; 3rd, Geo. Burn.

A. O. V. DUCKS.

Drakes, 4.—1st and 2nd, H. Karn; 3rd, Geo. Burn.
Ducks, 4.—1st, H. B. Donovan; 2nd and 3rd, H. Karn.
Drakes, 1910, 3.—1st, H. Karn; 2nd, J. C. Powney; 3rd, A. G. H. Luxton.
Ducks, 1910, 3.—1st, H. Karn; 2nd, J. C. Powney.

ENGLISH PHEASANTS.

Pair, 3.—1st and 2nd, Miss E. Davidson.

SILVER PHEASANTS.

Pair, 1.—1st, F. G. Bond.

GUINEA FOWL.

Pair, 8.—1st, J. P. & E. A. Hales; 2nd, Walter Robinson; 3rd, Miss Davidson.

PIGEONS.

BLACK CARRIER.

Cocks, 3.—1st, H. Limon; 2nd, A. Sutherland.
Hens, 2.—1st and 2nd, H. Limon.

DUN CARRIER.

Cocks, 2.—1st and 2nd, H. Limon.
Hens, 3.—1st and 2nd, H. Limon.

A. O. S. C. CARRIER.

Cocks, 2.—1st and 2nd, H. Limon.
Hens.—1st and 2nd, H. Limon.

WHITE POUTER.

Cocks, 2.—1st, J. H. Magill; 2nd W. H. Reid.
Hens, 2.—1st, W. H. Reid; 2nd, J. H. Magill.

BLUE PIED POUTER.

Cocks, 2.—1st and 2nd, J. H. Magill.
Hens, 4.—1st and 2nd, J. H. Magill.

BLACK PIED POUTER.

Cocks, 2.—1st and 2nd, J. H. Magill.
Hens, 1.—1st, J. H. Magill.

YELLOW OR RED POUTER.

Cocks, 3.—1st and 2nd, J. H. Magill.
Hens, 3.—1st and 2nd, J. H. Magill.

BLUE OR BLACK PIED PIGMY POUTER.

Cocks, 3.—1st, Geo. Bailey; 2nd, J. S. Greenshields.
Hens, 5.—1st and 2nd, Geo. Bailey.

A. O. C. PIGMY POUNTER.

Cocks, 5.—1st and 2nd, J. S. Greenshields.
Hens, 3.—1st, W. H. Reid; 2nd, J. S. Greenshields.

MUFFED TUMBLER. (*Any Solid Color*).

Cocks, 4.—1st, Dr. Pingel & Son; 2nd, J. K. K. Butler.
Hens, 4.—1st, Benson & Tregwin; 2nd, Dr. Pingel & Son.

MUFFED TUMBLER. (*Any Parti-Color*).

Cocks, 5.—1st, J. V. McAree; 2nd, A. Sûtherland.
Hens, 5.—1st, J. V. McAree; 2nd, C. E. Salmon.

L. F. CLEAN LEG TUMBLER.

Cocks, 8.—1st, J. V. McAree; 2nd, C. E. Salmon.
Hens, 10.—1st and 2nd, J. V. McAree.

S. F. ALMOND TUMBLER.

Cocks, 4.—1st, A. Sutherland; 2nd, W. T. Hodgens.
Hens, 2.—1st, W. H. Reid.

S. F., A. O. C. TUMBLER.

Cocks, 4.—1st and 2nd, W. H. Reid.
Hens, 5.—1st and 2nd, W. H. Reid.

A. O. S. C. BARB.

Hens, 1.—1st, W. T. Hodgens.

A. C. TRUMPETER.

Cocks, 5.—1st, A. Sutherland; 2nd, W. H. Reid.
Hens, 5.—1st, A. Sutherland; 2nd, W. H. Reid.

BLACK JACOBIN.

Cocks, 6.—1st, Benson & Tregwin; 2nd, Chas. Lizzard.
Hens, 9.—1st, Benson & Tregwin; 2nd, Barker & Currier.

RED JACOBIN.

Cocks, 8.—1st and 2nd, Benson & Tregwin.
Hens, 8.—1st and 2nd, Benson & Tregwin.

YELLOW JACOBIN.

Cocks, 6.—1st, J. S. Greenshields; 2nd, Barker & Currier.
Hens, 6.—1st, J. S. Greenshields; 2nd, Benson & Tregwin.

WHITE JACOBIN.

Cocks, 6.—1st, Barker & Currier; 2nd, Chas. Lizzard.
Hens, 4—1st and 2nd, Barker & Currier.

A. O. S. C. Jacobin.

Cocks, 7.—1st, J. S. Greenshields; 2nd, W. H. Reid.
Hens, 6.—1st and 2nd, Barker & Currier.

Oriental Frills.

Cocks, 3.—1st and 2nd, H. Limon.
Hens, 3.—1st, Barker & Currier; 2nd, H. Limon.

R. C. Antwerp.

Cocks, 3.—1st, Alfred Knight; 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

Silver Dun Antwerp.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 3.—1st, Alfred Knight; 2nd, W. H. Reid.

White Fantail.

Cocks, 6.—1st and 2nd, Geo. D. Trimble.
Hens, 4.—1st and 2nd, Geo. D. Trimble.

Blue Fantail.

Cocks, 5.—1st, J. S. Greenshields; 2nd, A. Sutherland.
Hens, 5.—1st, A. & T. Readwin; 2nd, J. S. Greenshields.

Black Fantails.

Cocks, 6.—1st, J. F. Henry; 2nd, Geo. D. Trimble.
Hens, 5.—1st, J. F. Henry; 2nd, W. J. McNally.

A. O. S. C. Fantail.

Cocks, 5.—1st, W. T. Hodgens; 2nd, J. F. Henry.
Hens, 5.—1st, W. T. Hodgens; 2nd, Geo. D. Trimble.

Red or Yellow Magpie.

Cocks, 7.—1st, W. H. Reid; 2nd, J. S. Greenshields.
Hens, 8.—1st and 2nd, J. S. Greenshields.

A. O. C. Magpie.

Cocks, 5.—1st and 2nd, J. S. Greenshields.
Hens, 5.—1st and 2nd, J. S. Greenshields.

Blue or Black Chequered Show Homer.

Cocks, 4.—1st, Alfred Knight; 2nd, Chas. Johnson.
Hens, 3.—1st, Alfred Knight; 2nd, Chas. Johnson.

A. O. C. Show Homer.

Cocks, 4.—1st and 2nd, Alfred Knight.
Hens, 4.—1st and 2nd, Alfred Knight.

Black Swallow.

Cocks, 1.—1st, W. H. Reid.
Hens, 1.—1st, A. Sutherland.

A. O. Sol. C. Swallow.

Cocks, 2.—1st, A. Sutherland; 2nd, W. J. Teale.
Hens, 1.—1st, W. J. Teale.

A. O. C. Swallow.

Cocks, 3.—1st, J. F. Henry; 2nd, W. T. Hodgens.
Hens, 3.—1st, W. T. Hodgens; 2nd, Dr. Pingel & Son.

Chequered Dragoon.

Cocks, 5.—1st, Cecil Harris; 2nd, Wilbert Steer.
Hens, 3.—1st, Cecil Harris; 2nd, Wilbert Steer.

A. O. C. Dragoon.

Cocks, 1.—1st, Cecil Harris.
Hens, 3.—1st and 2nd, Cecil Harris.

Archangel.

Cocks, 7.—1st, J. V. McAree; 2nd, Geo. McAllister.
Hens, 5.—1st, J. V. McAree; 2nd, W. H. Reid.

Nun.

Cocks, 4.—1st and 2nd, C. H. Pudifin.
Hens, 3.—1st and 2nd, C. H. Pudifin.

Blue or Silver African Owl.

Cocks, 3.—1st, John Storey; 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, John Storey.

A. O. C. African Owl.

Cocks, 4.—1st and 2nd, Frank Bible.
Hens, 4.—1st, Frank Bible; 2nd, W. H. Reid.

Blue or Silver English Owl.

Cocks, 5.—1st and 2nd, W. H. Reid.
Hens, 4.—1st, W. H. Reid; 2nd, Alfred Knight.

A. O. C. English Owl.

Hens, 3.—1st and 2nd, W. H. Reid.

A. O. V. Owl.

Cocks, 3.—1st, W. H. Reid; 2nd, A. Sutherland.
Hens, 3.—1st W. H. Reid; 2nd, A. Sutherland.

Black Turbit.

Cocks, 2.—1st and 2nd, J. S. Greenshields.
Hens, 3.—1st, Geo. Bailey; 2nd, J. S. Greenshields.

A. O. C. Turbit.

Cocks, 3.—1st, Geo. Bailey; 2nd, J. S. Greenshields.
Hens, 2.—1st and 2nd, J. S. Greenshields.

A. O. S. Variety Pigeons.

Cocks, 5.—1st, A. & T. Readwin; 2nd. Alfred Knight.
Hens, 4.—1st and 2nd, A. & T. Readwin.

PIGEONS BRED IN 1910.

Carrier, Any Color.

Cocks and Hens, 2.—1st and 2nd, H. Limon.

PIGMY POUTER, ANY COLOR.

Cock and Hens, 6.—1st, Geo. Bailey; 2nd, Douglas Mitchell.

A. O. V. POUTER, ANY COLOR.

Cocks and Hens, 1.—1st, W. H. Reid

MUFFED TUMBLER, ANY COLOR.

Cocks and Hens, 4.—1st, J. V. McAree; 2nd, J. F. Henry.

L. F. TUMBLER, ANY COLOR.

Cocks and hens, 8—1st and 2nd, J. V. McAree.

JACOBIN, ANY COLOR.

Cocks and Hens, 8.—1st, J. S. Greenshields; 2nd, Barker & Currier.

ORIENTAL FRILL, ANY COLOR.

Cocks and Hens, 3.—1st and 2nd, H. Limon.

FANTAIL, ANY COLOR.

Cocks and Hens, 7.—1st, J. F .Henry; 2nd, J. S. Greenshields.

MAGPIE, ANY COLOR.

Cocks and Hens, 8.—1st, J. S. Greenshields; 2nd, A. & T. Readwin.

SHOW HOMER, ANY COLOR.

Cocks and Hens, 3.—1st and 2nd, Alfred Knight.

SWALLOW, ANY COLOR.

Cocks and Hens, 1.—1st, Frank Webster.

DRAGOON, ANY COLOR.

Cocks and Hens, 5—1st and 2nd, Wilbert Steer.

ARCHANGEL.

Cocks and Hens, 4.—1st, J. V. McAree; 2nd, A. & T. Readwin.

NUN, ANY COLOR.

Cocks and Hens, 4.—1st, A. & T. Readwin; 2nd, C. H. Pudifin.

ENGLISH OWL, ANY COLOR.

Cocks and Hens, 3.—1st, H. Limon.

A. O. V. OWL, ANY COLOR.

Cocks and Hens, 5.—1st and 2nd, Frank Bible, Jr.

TURBIT, ANY COLOR.

Cocks and Hens, 3.—1st, Geo. Bailey ;2nd, J. S. Greenshields.

MISCELLANEOUS.

ABYSSINIAN CAVIES.

Pair, 3.—1st and 2nd, Wm. Fox.

PERUVIAN CAVIES.

Pair, 3.—1st and 2nd, Wm. Fox.

SMOOTH COATED CAVIES.

Pair, 6.—1st, Wm. Fox; 2nd, Frank Cook & Son.

DUTCH RABBIT.

Males, 2.—1st, Leonard Parker; 2nd, Wm. Wilson.
Females, 2.—1st, Leonard Parker; 2nd, Wm. Wilson.

A. O. V. RABBIT.

Males, 4—1st, Leonard Parker; 2nd, A. G. H. Luxton.
Females, 5.—1st Leonard Parker; 2nd, Wm. Wilson.

BELGIAN HARE.

Males. 3.—1st, Thos. F. Holmes; 2nd. Reg. Stratford.
Females, 3.—1st, Thos. F. Holmes; 2nd, A. G. H. Luxton.

A. O. V. CANARY.

Males, 2.—1st, J. R. Bailey; 2nd, Wm. J. Hood.

PEN OF UTILITY FOWL.

Pen, 13.—1st, G. Morton; 2nd, J. W. Clark; 3rd, F. W. Krouse.

SELLING CLASS.

DORKINGS.

Males, 7.—1st, F. W. Krouse; 2nd, Wm. J. Hood; 3rd, John Sockett.
Females, 5.—1st, F. W. Krouse; 2nd, Wm. J. Hood; 3rd, G. A. Burns.

PLYMOUTH ROCKS.

Males, 41.—1st, F. W. Krouse; 2nd, W. H. Thomson; 3rd, M. R. Hoover.
Females, 17.—1st, M. R. Hoover; 2nd, Philip Berduse; 3rd, Wm. A. Rife.

WYANDOTTES.

Males, 17—1st, Wm. Archer; 2nd, Sid Saunders; 3rd, Geo. W. Whetham.
Females, 8.—1st, Sid. Saunders; 2nd, Wilber Lemon; 3rd, Jos. Houden.

ORPINGTONS.

Males, 10.—1st, Geo. A. Jameson; 2nd, A. G. H. Luxton; 3rd, Wm. A. Rife.
Females, 6.—1st, A. G. H. Luxton; 2nd, C. H. Wilson; 3rd, P. J. McEwen.

MINORCAS.

Males, 28.—1st, R. J. Teskey; 2nd, R. J. Teskey; 3rd, Thos. T. Winstanley.
Females, 8.—1st, F. W. Krouse; 2nd, R. L. Wheadon; 3rd, Wm. J. Hood.

LEGHORNS.

Males, 44.—1st, M. R. Hoover; 2nd, E. Syer; 3rd, R. Hughes.
Females, 13.—1st, F. Wales; 2nd, D. Douglas & Sons; 3rd, C. H. Wilson.

RHODE ISLAND REDS.

Males, 35.—1st, J. E. Klager; 2nd, Arthur W. Tyson; 3rd, Jack Philpot
Females, 11.—1st.—Wm. Pearson; 2nd and 3rd, J. E. Klager.

ANY VARIETY ASIATICS.

Males, 10.—1st, R. McCurdy; 2nd, F. W. Krouse; 3rd, F. Wales.
Females, 13.—1st, R. McCurdy; 2nd and 3rd, A. C. Bricker & Dr. McDowell.

ANY OTHER VARIETY.

Males, 27.—1st, C. H. Wilson; 2nd, R. L. Wheadon; 3rd, A. T. Schario.
Females, 15.—1st, C. H. Wilson; 2nd, R. L. Wheadon; 3rd, Wm. McNeil.

ANY VARIETY PIGEONS.

Male and Female, 16.—1st, Barker & Currier; 2nd, A. & T. Readwin.

DRESSED POULTRY.

Pair Brahmas, 3—1st, 2nd and 3rd, J. E. Mounce.
Pair Langshans, 2.—1st and 2nd, J. E. Mounce.
Pair Plymouth Rock Cockerels, 15.—1st, J. E. Mounce; 2nd, Scanlon Bros.; 3rd, Gardiner Wood.
Pair Plymouth Rock Pullets, 8.—1st and 2nd, A. A. Armstrong; 3rd, J. E. Mounce.
Pair Wyandotte Cockerels, 4.—1st and 2nd, J. E. Mounce; 3rd, Luxton and Whetham.
Pair Wyandottes Pullets, 2.—1st, J. E. Mounce.
Pair Rhode Island Reds, 9.—1st, Gardiner Wood; 2nd and 3rd, J. E. Mounce.
Pair Minorcas or Andalusians, 10.—1st and 3rd, A. A. Armstrong; 2nd, J. E. Mounce.
Pair Leghorns, 11.—1st, Gardiner Wood; 2nd, A. A. Armstrong; 3rd, J. E. Mounce;
Pair Dorkings, 5.—1st, 2nd and 3rd, J. E. Mounce.
Pair Houdans, La Flechc or Creve Coeurs of 1910, Any Variety, 5.—1st, 2nd and 3rd, J. E. Mounce.
Pair Games, of 1910, Any Variety, 7.—1st and 2nd, Geo. Fyfe; 3rd, C. J. Daniels.
Pair Javas, of 1910, Any Variety, 4.—1st, 2nd and 3rd, J. E. Mounce.
Pair Hamburgs, 3.—1st, 2nd and 3rd, J. E. Mounce.
Pair Orpington Cockerels, 3.—1st, 2nd and 3rd, J. E. Mounce.
Pair Orpington Pullets, 5.—1st, 2nd and 3rd, J. E. Mounce.
Turkey, Any age, Male. 1.—1st, Jos. Tomalin.
Pair Turkeys, Any Age, Female, 1.—1st, Jos. Tomalin.
Pair Turkeys, of 1910, Male, 2.—1st, Jos. Tomalin; 2nd, Scanlon Bros.
Pair Turkeys, of 1910, Female, 1.—1st. Jos. Tomalin.
Pair White Geese, of 1910, 4.—1st, Scanlon Bros.; 2nd, Luxton & Whetham; 3rd, Jos. Tomalin.
Pair Colored Geese, of 1910, 4.—1st, Scanlon Bros.; 2nd, Luxton & Whetham; 3rd, J. P. & E. A. Hales.
Pair White Ducks, of 1910, 2.—1st, Luxton & Whetham; 2nd, Jos. Tomalin.
Pair Colored Ducks, of 1910, 4.—1st, Scanlon Bros.; 2nd, Luxton & Whetham; 3rd, Jos. Tomalin.
Six Brahmas, Cochins or Langshans, of 1910. 1.—1st, J. E. Mounce.
Six Plymouth Rocks, Wyandottes or Rhode Island Reds, of 1910, 9.—1st, J. E. Mounce; 2nd, Scanlon Bros.; 3rd, J. E. Mounce.
Six Minorcas, Andalusians or Javas, of 1910, 4.—1st and 2nd, J. E. Mounce; 3rd, C. D. Worthington.
Six Dorkings, Houdans, La Flechc, Creve Coeurs or Orpington, of 1910—1st, 2nd and 3rd J. E. Mounce.
Six Games, of 1910, 1.—1st, Geo. Fyfe.
Six Leghorns or Hamburgs, of 1910, 5.—1st and 2nd, J. E. Mounce; 3rd, C. D. Worthington.
Six Turkeys, of 1910, 1.—1st, Jos. Tomalin.
Six Geese, of 1910, 3.—1st, Scanlon Bros.; 2nd, Luxton & Whetham.
Six Ducks, of 1910, 3.—1st, J. P. & E. A. Hales; 2nd, Luxton & Whetham; 3rd, Jos. Tomalin.
Twelve Fatted Cockerels, 21.—1st, Gardiner Wood; 2nd, 3rd and 5th, J. E. Mounce; 4th, A. A. Armstrong.
One Dozen White Eggs, 6—1st, Hubert Thorne; 2nd, F. W. Krouse; 3rd, Wm. J. Hood.
One Dozen Brown Eggs, 3.—1st and 2nd, F. W. Krouse; 3rd, Chas. Gould.
Six Squabs, 3.—1st and 2nd, Wm. J. Hood.

POULTRY SPECIALS.

Light Brahmas.—Best male, H. W. Partlo; best female, H. W. Partlo; best cock, hen, cockerel and pullet, H. W. Partlo.

Dark Brahmas.—Best cock, L. C. Sage; best hen, L. C. Sage; best colored female, L. C. Sage; best collection, L. C. Sage.

Buff Cochins.—Best cockerel, and pullet, Holmhurst Poultry Yards; best collection, Holmhurst Poultry Yards.

Partridge Cochins.—Best cock, Hugh A. Rose; best hen, F. Wales; second best hen, Hugh A. Rose.

Black Cochins.—Best collection, C. A. R. Tilt.

White Cochins—Best Collection, Hugh A. Rose.

Black Langshans.—Best cock or cockerel, C. A. R. Tilt; best hen, C. A. R. Tilt; best pullet, C. A. R. Tilt; best collection, C. A. R. Tilt; best trio, C. A. R. Tilt.

White Langshans.—Best cockerel and pullet, Wm. Pearson.

A. O. C. Langshans.—Best cock, W. J. Teale; best hen, W. J. Teale; best cockerel, Wm. Pearson; best pullet, Geo. Burn; best cock, hen, cockerel and pullet, W. J. Teale.

Asiatics.—Best bird, Douglas T. Taylor

Barred Plymouth Rocks.—Best cock, John Pringle; best hen, I. K. Millard; best cockerel, I. K. Millard; best pullet, I. K. Millard; best male, I. K. Millard; best female, I. K. Millard; best collection, I. K. Millard; best four Barred Rocks, I. K. Millard.

White Plymouth Rocks.—Best cock and hen, C. J. Whitney; best cockerel and pullet, J. L. Brown; male with best legs, J. L. Brown; female with best legs, J. L. Brown;; largest exhibit, J. L. Brown.

Buff Plymouth Rocks.—Best cockerel, John Bawden; best pullet, John Bawden; best collection, John Bawden.

Plymouth Rocks.—Best bird, C. J. Whitney.

Golden-Laced Wyandottes.—Best cock, Robert Patterson; best hen, Claude Hughes; best cockerel, Claude Hughe;s best pullet, Robert Patterson; best pair pullets, James Baptie.

Silver-Laced Wyandottes.—Best male, Alfred Flawn; best female, Alfred Flawn; best three cockerels and three pullets, James Arthur; best laced pair of pullets, Alfred Flawn.

Black Wyandottes.—Best male, Hugh A. Rose; best female, A. & T. Readwin; best collection, Hugh A. Rose.

Buff Wyandottes.—Best cock, James Dundas; best cockerel and pullet, James Dundas; best collection, R. Holman.

Silver Pencilled Wyandottes.—Best cock, Robert Patterson; best hen, Geo. Burrows; best cockerel, Robert Patterson; best pullet, A. H. Switzer; best collection, Robert Patterson.

White Wyandottes.—Best cock, Russell Farm; best hen, Russell Farm; best cockerel, W. Dawson; 1st prize cockerel showing best table qualities, W. Howard; 2nd prize cockerel, showing best table qualities, Sid Saunders; 3rd prize cockerel, showing best table qualities, W. Dawson; best pullet, W. Dawson; best male, W. Dawson; best female, W. Dawson; best collection, Russell Farm; second best collection, W. Dawson; third best collectino, R. W. Vout.

Partridge Wyandottes.--Best cock, Frank Glass; best hen, Adam Bros.; best shaped hen, Adams Bros.; best cockerel, Adams Bros.; best shaped cockerel, S. Rundle; best pullet, Adams Bros.; best shaped pullet, Frank Glass; best collection, Adams Bros.

Columbian Wyandottes.—Best cock, S. J. Schelly; best hen, S. J. Schelly; best cockerel, S. J. Schelly; best five cockerels, S. J. Schelly; best pullet, H. W. Partlo; best pair pullets with best hackles, S. J. Schelly.

Wyandottes.—Best bird. W. Dawson.

Dominiques.—Best male, A. G. H. Luxton; best female, G. B. Carbert; best collection. G. B. Carbert.

Black Javas.—Best collection, T. J. Cole.

Mottled Javas.—Best male, Richard Oke; best collection, G. & J. Bogue.

S. C. Rhode Island Reds.—Best cock, Hughes & Taylor; best hen, T. A. Faulds; best cockerel, Hughes & Taylor; best pullet, Hughes & Taylor; best collection, T. A. Faulds.

R. C. Rhode Island Reds.—Best male, S. Charlton; best hen, C. J. Daniels; best pullet, Hughes & Taylor; best collection, S. Charlton.

Rhode Island Reds.—Exhibitor winning most points in S. C. and R. C., Hughes and Taylor.

Black Red Games.—Best pullet, J. W. Roberts; best collection. J. W. Roberts.

Brown Red Games.—Best collection, W. Barber.

Duckwing Games.—Best collection. W. Barber.

Pyle Games.—Best cock, hen, cockerel and pullet, John Parkinson; best collection, John Parkinson.

Cornish Indian Games.—Best cock, N. Topping; best hen, N. Topping; best cockerel, N. Topping; best collection, N. Topping.

Black Sumatra Games.—Best collection, L. Tozer.

Birchen Games.—Best collection, W. Barber.

A. O. V. Games.—Best collection, R. H. Barber.

Pit Games.—Best cock, W. J. Teale; best stag, R. H. Barber; best hen, R. H. Barber; best pullet, R. H. Barber; best collection, R. H. Barber.

R. C. White Leghorns.—Best collection, Irwin K. Martin.

S. C. White Leghorns.—Best cock, W. Ferguson; best cockerel, W. Ferguson; best pullet, F. Wales; best collection, W. Ferguson.

Black Leghorns.—Best three cocks, A. E. Doan; best hen, A. E. Doan; best cockerel, A. H. Switzer; best pullet, F. H. Gallinger.

S. C. Black Leghorns.—Best three cockerels, A. H. Switzer.

R. C Brown Leghorns.—Best pullet, Wm. W. Cadman; best collection, C. H. Wilson.

S. C. Brown Leghorns.—Best cock, Peter Scott; best hen, J. G. Taylor; best cockerel, J. G. Taylor; best pullet, W. A. Gurney; best cockerel and three pullets, H. F. Becker; cock with best wing color, Peter Scott.

Buff Leghorns.—Best cock and cockerel, R. B. Graham; best hen, R. B. Graham; best pullet, R. B. Graham.

Spanish.—Best hen, J. H. Warrington; best collection, Jas. Snetsinger.

S. C. Black Minorcas.—Best cock, T. A. Faulds; best hen, R. J. Teskey; best cockerel, T. A. Faulds; best colored cockerel, A. Goebel; best pullet, T. A. Faulds.

R. C. Black Minorcas.—Best cock, Ross Swartout; best hen, Dr. J. N. MacRae; best cockerel, Dr. J. N. MacRae; best pullet, T. A. Faulds.

White Minorcas.—Best collection, Thos. Vickers.

Andalusians.—Best male, Baker Bros.; best female, Grier Bros.; best collection, A. H. Switzer.

Anconas.—Best male, P. B. Becker; best female, J. McDowell; best collection, P. B. Becker.

Mediterranean Classes.—Best bird, W. Ferguson.

Silver Grey Dorkings.—Best male, Jas. M. McCormack; best colored male, Jas. M. McCormack; best female, Jas. M. McCormack; best collection, James M. McCormack.

Colored Dorkings.—Best male, J. H. Warrington; best female, G. & J. Bogue; best collection, Jas. M. McCormack.

White Dorkings.—Best hen, J. H. Warrington; best cockerel, J. H. Warrington; best collection, J. H. Warrington.

Buff Orpingtons.—Best two cocks, J. W. Clark; best two hens, J. W. Clark; best six cockerels, H. A. Hoffman; best six pullets, H. A. Hoffman; best male, J. W. Clark; best female, J. W. Clark; best collection, J. W. Clark; best cock, hen, cockerel and pullet, J. W. Clark; best cockerel, J. W. Clark.

Black Orpington.—Best hen, E. Fraleigh; best cockerel, Geo. A. Jameson; best four pullets, Hamilton & Scoyne; best collection, E. Fraleigh.

S. C. Black Orpington.—Best three cocks, Kemp & Waterman.

White Orpington.—Best cock, A. H. Westman; best hen, F. H. J. Moore; best cockerel, Wm. Wilson; best pullet, Wm. Wilson; best two cockerels and two pullets, Wm. Wilson.

Houdans.—Third prize cock, G. & J. Bogue; best hen, G. & J. Bogue; best cockerel, C. Day; best pullet, C. Day.

Creve Coeurs.—Best collection, G. & J. Bogue.

La Fleche—Best collection, G. & J. Bogue.

W. C. B. Polands.—Best collection of W. C. B., Wm. McNeil.

Golden Polands.—Best collection, G. & J. Bogue

Silver Polands.—Best collection, Wm. McNeil.

White Polands—Best collection, Wm. McNeil.

Golden Bearded Polands.—Best collection, G. & J. Bogue.

Silver Bearded Polands.—Best collection, Wm. McNeil.

White Bearded Polands.—Best collection, Wm. McNeil.

Buff Laced Bearded Polands.—Best collection, Wm. McNeil; best bird, Wm. McNeil.

Golden Spangled Hamburgs.—Best two hens, Jas. Baptie; best three cockerels, Samuel C. Spies; best two pullets, Jas. Baptie; best collection. Jas. Baptie.

Silver Spangled Hamburgs.—Best hen and pullet, Richard Oke; best three hens or pullets, Harry T. Lush; best collection, Richard Oke.

Golden Pencilled Hamburgs.—Best collection, Richard Oke.

Silver Pencilled Hamburgs.—Best collection. Richard Oke.

Black Hamburgs.—Best two cocks, two hens, two cockerels and two pullets, R. L. Wheadon; best collection, R. L. Wheadon.

Red Caps.—Best collection, Geo. W. Kinder.

Silkies.—Best cock, E. Saunders; best hen, E. Saunders; best cockerel, E. Saunders, best pullet, E. Saunders; collection by youngest exhibitor, E. Saunders.

Buckeyes.—Best male, C. J. Daniels; best female, C. J. Daniels.

A. O. V. Fowls.—Best male, Wm. McNeil; best female, Wm. McNeil; best collection, Wm. McNeil.

Black Red Game Bantams.—Best cock, W. R. Walker; best hen, Chas. R. Crowe; best cockerel, Chas. R. Crowe; best pullet, Chas R. Crowe; best collection, Chas. R. Crowe.

Brown Red Game Bantams.—Best cock, A. H. Trebilcock; best hen, A. H. Trebilcock; best cockerel, A. W. Tyson best pullet, A. H. Trebilcock; best collection, A. H. Trebilcock.

G. Duckwing Game Bantams.—Best cock, Wm. Pearson; best hen, W. Barber; best cockerel, W. Howard; best pullet, Wm. Pearson; best collection, W. Barber.

S. Duckwing Game Bantams.—Best cock, Wm. Pearson; best hen, W. Howard; best cockerel, Thos. Bower; best pullet, W. Howard; best collection, W. Howard.

Pyle Game Bantams.—Best cock, John Crowe; best hen, John Crowe; best cockerel, Thos. Bower; best pullet, Thos. Bower; best male, Thos. Bower; best collection, Thos. Bower.

White Game Bantams.—Best cock, H. B. Donovan; best hen, H. B. Donovan; best cockerel, Wm. Pearson; best pullet, H. B. Donovan; best collection, H. B. Donovan; best pair, H. B. Donovan.

Birchen Game Bantams.—Best cock, Wm. Pearson; best hen, Rooke Bros.; best cockerel, Wm. Pearson; best pullet, Wm. Pearson; best collection, Wm. Pearson.

Indian Game Bantams.—Best collection, T. J. Kiley.

Wheaten Game Bantams.—Best female, Chas. R. Crowe.

A. O. V. Game Bantams.—Best collection, H. B. Donovan.

Golden Sebright Bantams.—Best cock, Hugh A. Rose; best hen, Hugh A. Rose; best cockerel, Hugh A. Rose; best pullet, Hugh A. Rose.

Silver Sebright Bantams.—Best cock, Hugh A. Rose; best hen, Spiars Bros.; best cockerel, Hugh A. Rose; best pullet, Hugh A. Rose.

Black Rose Comb Bantams.—Best cock, Richard Oke; best hen, Hugh A. Rose; best cockerel, Richard Oke; best pullet, Richard Oke; best collection, Richard Oke.

White Rose Comb Bantams.—Best collection, Richard Oke.

White Cochin Bantams.—Best collection, Rosser Bros.

Buff Cochin Bantams.—Best collection, Rosser Bros.

Black Cochin Bantams.—Best cockerel, Dr. J. N. MacRae; best female; Dr. J. N. MacRae; best collection, Dr. J. N. MacRae.

Partridge Cochin Bantams.—Best male, L. Austin Brill; best collection, Rosser Bros.

Plain White Booted Bantams.—Best cock, Richard Oke; best hen, Richard Oke; best cockerel, T. J. Kiley; best pullet, T. J. Kiley; best collection, T. J. Kiley; best two young pairs, T. J. Kiley.

Bearded White Booted Bantams.—Best male, Richard Oke; best female, T. J. Kiley.

Japanese Black Tailed Bantams.—Best cock, Richard Oke; best hen, R. Oke; best male, Richard Oke; best female, Richard Oke.

White Japanese Bantams.—Best cock and hen, James Farley; best cockerel and pullet, James Farley.

Black Japanese Bantams.—Best male, Richard Oke; best female, Richard Oke.

A. O. V. Japanese Bantams.—Best male, Richard Oke; best female, Richard Oke.

White Bearded Polish Bantams.—Best cock, hen, cockerel, and pullet, T. J. Kiley.

White Unbearded Polish Bantams.—Best male, Hugh A. Rose; best female, H. B. Donovan .

Light Brahma Bantams.—Best cock, and hen, L. C. Howell; best cockerel and pullet, H. W. Partlo.

Dark Brahma Bantams.—Best male, Hugh A. Rose; best hen, Hugh A. Rose.

A. O. V. Bantams.—Best male, H. B. Donovan; best female, H. B. Donovan.

Bantams.—Best bird, Richard Oke.

Bronze Turkeys.—Best male, Ed. Haliday; best female, A. McDougall & Son; best male shown by new exhibitor, F. B. Garnsey; best female shown by new exhibitor, F. B. Garnsey; best collection by new exhibitor, F. B. Garnsey.

White Turkeys.—Best male, T. J. Cole; best female, Baker Bros.; best male shown by new exhibitor, Philip Berduse; best female shown by new exhibitor, Philip Berduse; best collection shown by new exhibitor, Philip Berduse.

A. O. V. Turkeys.—Best hen, A. McDougall & Son; best collection, A. McDougall & Son.

Turkeys.—Best young Turkey, F. B. Garnsey.

Toulouse Geese.—Best gander, Baker Bros.; best old goose, Scanlon Bros.; best young pair, A. McDougall & Son.

Embden Geese.—Best collection, Scanlon Bros.; best gander, Baker Bros.; best goose, A. McDougall & Son.

Brown Chinese Geese.—Best gander, A. G. H. Luxton.

White Chinese Geese.—Best collection, T. J. Cole.

African Geese.—Best collection, C. A. R. Tilt.

English Dun Geese.—Best collection, Isaac T. Knight.

Aylesbury Ducks.—Best collection, G. & J. Bogue.

Rouen Ducks.—Best collection, G. & J. Bogue.

Pekin Ducks.—Best collection, C. A. R. Tilt.

Indian Runner Ducks.—Best collection, T. J. Cole.

Cayuga Ducks.—Best collection, Baker Bros.

Muscovy Ducks.—Best collection, Isaac T. Knight.

Mallard Ducks.—Best collection, H. Karn.

PIGEON SPECIALS.

Best Jacobin, Any Color.—Benson & Tregwin.

Best L. F. Red Chequered Antwerp Cock.—Alfred Knight.

Best collection Antwerps.—W. H. Reid.

Best Fantail. Any Color.—J. S. Greenshields.

Best Magpie, Any color.—J. S. Greenshields.

Best Blue Show Homer Cock.—Alfred Knight.

Best Blue Show Homer Hen.—Alfred Knight.

Best Silver Show Homer.—Alfred Knight.

Best Swallow, Any Color.—J. F. Henry.

Best collection of Turbits.—J. S. Greenshields.

Best collection of 1910 Tumblers.—J. V. McAree.

Best Pigeon.—W. H. Reid.

MISCELLANEOUS POULTRY. SPECIAL PRIZES.

Cavies.—Best collection, Wm. Fox; 2nd best collection, Frank Cook & Son

A. O. C. Rabbits.—Best collection, Wm. Wilson.

Utility Pen.—Best pen, G. Morton.

Pheasants. Best pair Silver.—F. G. Bond.

Guinea Fowl.—Best exhibit of Young White Guineas, Miss E. Davidson.

Best exhibits of Dressed Chickens.—J. E. Mounce.

Best Dressed Young Turkey.—Scanlon Bros.

Best decorated Exhibition Coop.—E. Saunders.

Best male bird in Show.—W. Dawson.

Best cock, hen, cockerel and pullet in Show.—Wm. McNeil.

Best female bird in Show.—T. A. Faulds.

PRIZE WINNERS AT EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.

OTTAWA, ONT., JANUARY 16th to 20th, 1911.

HORSES.

Clydesdale Stallions, foaled previous to Jan. 1st, 1907.

1st—Craigisla (imp.), [10587] foaled March, 1904; sire, Prince Thomas [4028]; dam, Princess May [23132]. Exhibited by Graham Renfrew Co., Limited, Bedford Park.

2nd—Sir Spencer (imp.) [9655], foaled 1904; sire, Sir Hugo [4923]; dam, Bet (18560). Exhibited by Robert Ness & Son, Howick, Que.

3rd—Gay Sprig (imp.), [7794], foaled June, 1906; sire, Refiner [5418]; dam, Lily Favorite [13882]. Exhibited by Graham Renfrew Co., Limited, Bedford Park.

4th—Golden Crown (imp.) [10656], foaled May, 1905; sire, Gold Mine [9540]; dam, Ruby (20506). Exhibited by Wm. Mehary, Russell.

5th—Baron Russell (imp.) [9595] (13351), foaled 1905; sire, Baronson, [5347] (10981); dam, Flora of Baseir [18379] (21769). Exhibited by Smith and Richardson, Columbus.

6th—Lord Aberdeen (imp.), [8495], foaled May, 1906; sire, Netherlea [8324] dam, Birch Bloom [15784] (14521). Exhibited by Mt. Victoria Stock Farm, E. Watson, Manager, Hudson Heights, Que.

7th—Top Spot (imp.) [7795], foaled May, 1906; sire, Baron Hood [6137], dam Lady Stormont [13886]. Exhibited by Graham Renfrew Co., Limited, Bedford Park.

Clydesdale Stallions foaled in 1907.

1st.—Sailor King (imp.) [11701], foaled April, 1907; sire, Pacific [9528]; dam, Sarah Grand [7409]. Exhibited by Graham Renfrew Co., Limited, Bedford Park.

2nd.—Glenavon (imp.), [11467] (15237), foaled June 25th, 1907; sire, Baron Boquhan [10547] (12840); dam, Darling Kirkton [7323] (15036). Exhibited by Smith & Richardson, Columbus.

3rd—Bowhill Baron (imp), [9492], foaled 1907; sire, Baron's Pride [3067]; dam, Water Lily (14802). Exhibited by Robert Ness & Son, Howick, Que.

4th—Invergowrie (imp.) [11468] (15258), foaled April 28th, 1907; sire, Marmion [5466] (11429); dam, Blacon Fancy [22894] (20267). Exhibited by Smith and Richardson, Columbus, Ont.

5th—Wamphray (imp.), [9685], foaled May, 1907; sire, Count Victor [8434]; dam, Dora of Springfield [18691]. Exhibited by Graham Renfrew Co., Limited, Bedford Park.

6th—Dunure Shapely (imp.), [9597] (14658), foaled May 24th, 1907; sire, Baron O'Buchlyvie [5353] (11263); dam, Maggie of Laggin [18381] (16839). Exhibited by Smith & Richardson. Columbus.

Clydesdale Stallions foaled in 1908.

1st—Baron Marquis (imp.) [11702], foaled April, 1908; sire, Baron's Pride [3067]; dam, Jean of Chappelcroft [20122]. Exhibited by Graham Renfrew Co., Limited. Bedford Park.

2nd—Ruby [11703]. Exhibited by the Graham Renfrew Co., Limited, Bedford Park.

3rd—Baron Crawford (imp.), [9592] (14936), foaled May 23rd, 1908; sire, Blacon Sensation [8048] (12487); dam, Jennie of Chapmanton [15618] (16589). Exhibited by Smith & Richardson, Columbus.

4th—Baron Cuthbert (imp.), [10658], foaled May, 1908; sire, Baron's Bride, [9122]; dam, Madeline of Chapelton (15090). Exhibited by Wm. Meharey, Russell.

5th—Baron Kirkcowan (imp.), [11679], foaled May 30th, 1908; sire, Baron's Pride [3067]; dam, Flora McGregor [14991]. Exhibited by Barber Bros., Gatineau Point, Que.

6th.—Baron Mansfield (imp.), [11466] (15139), foaled April 29th, 1908; sire, Baron's Pride [3067] (9122); dam, Miranda of Chapelton [10005] (13857). Exhibited by Smith & Richardson, Columbus.

Clydesdale Stallions foaled in 1909.

1st—Sterling (imp.) [11471] (15559), foaled May 8th, 1909. Sire, Royal Edward [6141] (11495); dam, Lily of Muirton [12842] (18462). Exhibited by Smith & Richardson, Columbus.

2nd—The Majestic (imp.), [10951], foaled 1909. Sire, Majestic Baron [10539]; dam, Mayleaf (16920). Exhibited by Robt. Ness & Son, Howick, Que.

Canadian-Bred Clydesdale Stallions, foaled previous to Jan. 1st, 1910.

1st—Koyama [8029] foaled June 2nd, 1906; sire, The Rejected [4800], dam, Maggie Carrick (14580). Exhibited by David G. Boyd, Kars, Ont..

2nd—Merchiston Again [6394], foaled 1906; sire, Merchiston [2833], dam, Miss Lawrence [2443]. Exhibited by Robert Ness & Son, Howick, Que.

3rd—Jim Macbay [7426], foaled May 17th, 1907; sire, Alexander's Heir [2557] (10151); dam, Miss Annie of Erin [2413]. Exhibited by Smith & Richardson, Columbus.

4th—Prince Onslow [7310], foaled June 1st, 1907; sire, Lord Onslow [4765] (12653); dam, Eastfield Maid [2434]. Exhibited by Smith & Richardson, Columbus.

Canadian-Bred Clydesdale Stallions foaled in 1908.

1st—Kinross [8494], foaled 1908; sire, British Chief [8491] (12500); dam, Lady Kinross [15777]. Exhibited by Mount Victoria Stock Farm, E. Watson, Manager, Hudson Heights, Que.

2nd—Baron Tofty [8946], foaled May 5th, 1908; sire, Baron Williamstown [4102] (12043); dam, Molly Tofty [7093]. Exhibited by George A. Hodgins, Carp.

3rd—Baron's Kid [9742], foaled June 17th, 1908; sire, Ace of Spades [7234]; dam, Jane Austin [10587]. Exhibited by Thos. Clarey, Ottawa.

Canadian-Bred Clydesdale Stallions, foaled on or after Jan. 1st, 1909.

1st—Fascination [10244], foaled June 20th, 1909; sire, Black Ivory [7761] (13367); dam, Blair Gowrie II. [3320]. Exhibited by Smith & Richardson, Columbus.

2nd—Bay Ivory [10245], foaled June 15th, 1909; sire, Black Ivory [7761] (13367); dam, Belle McGregor (4851). Exhibited by Smith & Richardson, Columbus.

3rd—Wandering Willie [10275], foaled May 26th, 1909; sire, Knight of Merryfield [7760] (13051); dam, Maud Macmorland [8580]. Exhibited by Chas. Dunlop, Rideau View.

Clydesdale Mares foaled previous to Jan. 1st, 1908.

1st—Moncrieffe Duchess (imp.) [22690] foaled May, 1904; sire, Moncrieffe Marquis [6375], dam, Ardlethan Barry [22000]. Exhibited by Graham, Renfrew Co., Limited, Bedford Park.

2nd—Baroness Insch (imp.) [20270] (23247), foaled 1907; sire, Casabianca (15023); dam, Insch Maggie (19679). Exhibited by Smith & Richardson, Columbus.

3rd—Rosebella (imp.) [16919], foaled 1904; sire, Marcellus [4683], dam, May Morn [11423]. Exhibited by Robert Ness & Son, Howick, Que.

4th—Harmony Jess [12903], foaled 1905; sire, Harmony [2951]; dam, Jess. Exhibited by Hodgkinson & Tisdale, Beaverton.

5th—Black Queen (imp.), [23567], foaled May 1906; sire, Baron O'Dee [5369]; dam, Kitty of Kirkcudbright [11295]. Exhibited by Graham Renfrew Co., Limited, Bedford Park.

Clydesdale Mares, foaled in 1908.

1st—Royal Rosie (imp.) [23171] (25215), foaled 1908; sire, Royal Edward [6141] (11495); dam, Rose of Banleath [9308] (14301). Exhibited by Smith & Richardson, Columbus.

2nd—Bessie Lane (imp.) [24279], foaled 1908; sire, Flask Sturdy [8660]; dam, Pellipar's Last (20073). Exhibited by Hodgkinson & Tisdale, Beaverton.

3rd—Lady Bane (imp.) [22697], foaled 1908; sire, Faraway Blend [11059]; dam, Maggie of Insch (22303). Exhibited by Hodgkinson & Tisdale, Beaverton.

4th—Rose Wright (imp.) [23046], foaled 1908; sire, Douglas Chief [7359]; dam, Rose of Silloth [22810]. Exhibited by Robert Ness & Son, Howick, Que.

Clydesdale Mares foaled on or after Jan. 1st, 1909.

1st—Heliedore (imp.), [23043], foaled 1909; sire, Scottish Crest [8643]; dam, Dalsy of Challoch [15202]. Exhibited by Robert Ness & Son, Howick, Que.

2nd—Jessie Cameron (imp.), [24281], foaled 1909; sire, Baron's Chief [7745]; dam, Bessie of Scalpsie [23891]. Exhibited by Hodgkinson and Tisdale, Beaverton.

3rd—Baroness Humphrey (imp.), [22703], foaled 1909; sire, Sir Humphrey [7140]; dam, Baroness of Girvan [13309]. Exhibited by Hodgkinson and Tisdale, Beaverton.

Canadian-bred Clydesdale Mares, foaled previous to January 1st, 1908.

1st—Fanny Forward [20486], foaled 1907; sire, Right Forward (imp.) [4363]; dam, Scottish Rose [4786]. Exhibited by Hodgkinson & Tisdale, Beaverton.

2nd—Lady Gold [17055], foaled June 4th, 1906; sire, Fyvie Gold [4696] (11341); dam, Florence McLaws [3500]. Exhibited by A. Scharf, Cumming's Bridge.

3rd—Lady Gartley (9338), foaled July 4th, 1906; sire, Baron Gartley (imp.) [4789]; dam, Lady Aberdeen (imp.) [6166]. Exhibited by A. Miller & Son, Arnprior.

4th—Lady Mark [15883], foaled June 6th, 1906; sire, Cecil [3352]; dam, Beautiful Bell [2643]. Exhibited by Hiram F. O'Callaghan, Kars.

Canadian-bred Clydesdale Mares, foaled in 1908.

1st—Cyrene, foaled 1908; sire, Royal Baron (imp. [4722]; dam, Minnie King. Exhibited by Hodgkinson & Tisdale, Beaverton.

Canadian-bred Clydesdale Mares foaled on or after January 1st, 1909.

1st—Rosvelva [24119], foaled May 2nd, 1909; sire, President Roosevelt (imp.) [7759]; dam, Queenie (imp.) [13791]. Exhibited by John Bright, Myrtle Station.

2nd—Queen of Mongolia [20487] foaled 1909; sire, Right Forward (imp.) [4363]; dam, Castlehill Beauty [10716]. Exhibited by Hodgkinson & Tisdale, Beaverton.

3rd—Salome 7th [20772], foaled July 1st, 1909; sire, Inheritor (imp.) [7765]; dam, Salome 5th (imp.) [4777]. Exhibited by John Bright, Myrtle Station.

Shire Stallions, any age.

1st—Beamhope Dalesman (imp.) [734], foaled 1905; sire, Nyn Hitchin Duke [14782]; dam, Daresbury Rose [31644]. Exhibited by Thos. Irving, Winchester.

2nd—Admiral Togo (imp.) [399], foaled 1904; sire, Mars [275]; dam, Moulton Mariana [164]. Exhibited by John Johnston, Elliott.

Shire Mares, any age.

1st—Black Beauty (imp.) [374], foaled 1908; sire, Admiral Toga [399]; dam, Holdenby Nicausis [276]. Exhibited by John Johnston, Elliott.

Hackney Stallions, 15.2 hands or over, any age.

1st—Terrington Lucifer (imp.) –374–, foaled May, 1905; sire, Copper King (7764); dam, Terrington Lily (13973). Exhibited by Mount Victoria Stock Co., E. Watson, Manager, Hudson Heights, Que.

2nd—Dainty Duke of Connaught –353– (8809); foaled, 1903; sire, Garton Duke of Connaught (3009); dam, Dainty (1071). Exhibited by B. Rothwell, Ottawa.

Hackney Mares, foaled previous to January 1st, 1908.

1st—Orphelia's Fashion (imp.) –495–, foaled 1904; sire, Polonius (4931); dam, Chance (5128). Exhibited by Mount Victoria Stock Farm, E. Watson, Manager, Hudson Heights, Que.

2nd—Cymbal (imp.) –482–, foaled 1901; sire, Mathies (6473); dam, Lady Crawford (2867). Exhibited by Mount Victoria Stock Farm, E. Watson, Manager, Hudson Heights, Que.

3rd—Miss Conquest (imp.) –509– (17584), foaled 1904; sire, Conquest 2nd (5560); dam, Brampton Rosalie (16489). Exhibited by Geo. E. Stacey, Ottawa.

Hackney Mares, foaled on or after January 1st, 1908.

1st—Royal Ophelia (imp.) –620–, foaled 1909; sire, Royal Ophelian (8993); dam, Cymbal –482–. Exhibited by Mount Victoria Stock Farm, E. Watson, Manager, Hudson Heights, Que.

Standard-bred Stallions, any age.

1st—General Melrose, 51154, foaled 1908; sire, King Melrose, 37460; dam, Sadie Brine. Exhibited by J. M. Gardhouse, Weston.

2nd—Prince Ambrose 63984, foaled 1902; sire, Ambrosal, 12146; dam, Hillside Maid. 918. Exhibited by J. H. Skuce, Carsonby.
3rd—Parlin, foaled 1906; sire, Alclayone; dam, Maylee. Exhibited by Robert Ness & Son, Howick, Que.

Thoroughbred Stallions, any age.

1st—Valjean—150—53995, foaled 1906. Exhibited by P. Clarke, Ottawa.
2nd—Kirkfield—280—39433, foaled 1904; sire, The Commoner; dam, Ogarita. Exhibited by the Ottawa Hunt Club, Limited, Ottawa.
3rd—Pouka, 292, foaled May 6th, 1908; sire, Locohatchee (Vol. 9); dam, Poucho (Vol. 9). Exhibited by W. Cochrane, Ottawa.

Horses suitable for Hunters, Geldings or Mares, any age, carrying 175 lbs. or over.

1st—Elmburst. Exhibited by Hon. Clifford Sifton, Ottawa.
2nd—Phenomenon (grey gelding); foaled 1906. Exhibited by Dr. R. E. Webster, Ottawa.
3rd—Gentleman John (chestnut gelding); foaled 1904. Exhibited by Dr. R. E. Webster, Ottawa.
4th—No Trumps. Exhibited by Hon. Clifford Sifton, Ottawa.
5th—Woodlark (bay mare), foaled 1904. Exhibited by Dr. R. E. Webster, Ottawa.

Horses suitable for Hunters, Geldings or Mares, any age, carrying less than 175 lbs.

1st—Stay Away. Exhibited by Hon. Clifford Sifton, Ottawa.
2nd—Glenwood. Exhibited by Hon. Clifford Sifton, Ottawa.
3rd—Bayards (bay gelding), foaled 1906. Exhibited by the Ottawa Hunt Club, Limited, Ottawa.
4th—Top Thorne (dark bay gelding). Exhibited by Dr. W. H. Graham, Ottawa.
5th—Laddie (bay gelding). Exhibited by W. J. Mills, Ottawa

Pony Stallions, any age, any breed.

1st—Plymouth Horace (imp.)—4— —305—, foaled 1903; sire, Sir Horace (5402); dam, Lady Kate [4117]. Exhibited by the Graham, Renfrew Co., Ltd., Bedford Park.

Ponies, Geldings or Mares, any age or breed.

1st—Sally Grand (black hackney mare), foaled 1905. Exhibited by Graham, Renfrew Co., Ltd., Bedford Park.
2nd—Dimple, foaled May 21st, 1907. Exhibited by J. Wigmore, Ottawa.
3rd—Beauty (breed Exmoors, mare, 12 hands). Exhibited by C. R. Woodburn, Ottawa.
4th—Ruby (breed Exmoors, mare, 12 hands). Exhibited by C. R. Woodburn, Ottawa.

Heavy Draught Horses, Geldings or Mares, Shown in Single Harness.

1st—Fred, foaled June 4th, 1907; sire, Baron Richardson [5320]. Exhibited by Smith & Richardson, Columbus.
2nd—Gartly, foaled June 2nd, 1907; sire, Baron Gartly [4789]. Exhibited by Smith & Richardson, Columbus.
3rd—Florence McLaws. Exhibited by A. Scharf, Cumming's Bridge.
4th—Hattie MacIntosh [7737], foaled April, 1905. Exhibited by A. Scharf, Cumming's Bridge.
5th—Flora. Exhibited by John Minogue, Cumberland.

Heavy Draught Team in Harness, Geldings or Mares.

1st—Fred (See Section 1); Gartly (See Section 1). Exhibited by Smith & Richardson, Columbus.
2nd—Florence McLaws (See Section 1); Hattie MacIntosh (See Section 1). Exhibited by A. Scharf, Cumming's Bridge.
3rd—Lady Paxton (imp.) (25183); Lady Rothsay Fullerton (9339). Exhibited by A. Miller & Son, Arnprior.
4th—Harry, foaled 1905; Fred, foaled 1904. Exhibited by Thos. Clarey, Ottawa.

BEEF CATTLE.

Shorthorns.

Steer, 2 years and under 3.

1st, A. A. Armstrong, Fergus.

Steer, 1 year and under 2.

1st, Jas. Leask, Greenbank; 2nd, A. A. Armstrong, Fergus.

Steer, under 1 year.

1st, Peter White, Pembroke; 2nd, Jas. Leask, Greenbank; 3rd, A. A. Armstrong, Fergus.

Heifer, 2 years and under 3.

1st, A. A. Armstrong, Fergus.

Heifer, 1 year and under 2.

1st, Wm. A. Wallace, Kars; 2nd, A. A. Armstrong, Fergus.

Heifer, under 1 year.

1st, Jas. Leask, Greenbank; 2nd, Wm. A. Wallace, Kars; 3rd, A. A. Armstrong, Fergus.

HEREFORDS AND ABERDEEN-ANGUS.

Steer or Heifer, 2 years and under 3.

1st, L. O. Clifford, Oshawa; 2nd, A. A. Armstrong, Fergus.

Steer or Heifer, 1 year and under 2.

1st, L. O. Clifford, Oshawa.

Steer or Heifer, under 1 year.

1st, 2nd, 3rd and 4th, L. O. Clifford, Oshawa.

Cow or Heifer, 3 years or over.

1st, L. O. Clifford, Oshawa.

GALLOWAYS AND DEVONS.

Steer or Heifer, 2 years and under 3.

1st, A. A. Armstrong, Fergus.

Cow or Heifer, 3 years or over.

1st, A. A. Armstrong, Fergus.

GRADES OR CROSSES.

Steer, 2 years and under 3.

1st, 2nd and 3rd, A. A. Armstrong, Fergus; 4th, Alex. Dynes, Ottawa.

Steer, 1 year and under 2.

1st, 2nd, 3rd and 4th, A. A. Armstrong, Fergus.

Steer, under 1 year.

1st, Jas. Leask, Greenbank; 2nd, 3rd and 4th, A. A. Armstrong, Fergus.

Heifer, 2 years and under 3.

1st, 2nd, 3rd and 4th, A. A. Armstrong, Fergus.

Heifer, 1 year and under 2.

1st, 2nd and 3rd, A. A. Armstrong, Fergus; 4th, Jas. Leask, Greenbank.

Heifer, under 1 year.

1st and 4th, Jas. Leask, Greenbank; 2nd and 3rd, A. A. Armstrong, Fergus.

DRESSED BEEF CARCASSES.

Pure-bred or Grade.

1st and 2nd, Alex. Dynes, Ottawa; 3rd, 4th and 5th, A. A. Armstrong, Fergus.

Three Export Steers.

1st, 2nd, 4th and 5th, A. A. Armstrong, Fergus; 3rd, Alex. Dynes, Ottawa.

SPECIALS.

Best Grade Steer, sired by a pure-bred Shorthorn Bull.

1st, Jas. Leask, Greenbank; 2nd and 3rd, A. A. Armstrong, Fergus.

Best Steer in Show, judged from a butcher's standpoint.

1st, Peter White, Pembroke.

Best Beef Animal in the Show.

1st, W. A. Wallace, Kars.

Best 3 year old Steer, fed and exhibited by a resident of the County of Carleton.

1st, Alex Dynes, Ottawa.

Best Canadian bred Heifer, pure-bred, under 3 years.

1st, Wm. A. Wallace, Kars.

DAIRY TEST AT EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.

Name of Animal and Exhibitor.	Lbs. Milk.	Per Cent. Fat.	Points for Fat.	Points for Solids, not Fat.	Points for Lactation.	Total Points.
Class 35, Sec. 1.—Ayrshire Cow, 48 months and over.						
1st, Barcheskie Lucky Girl, R. R. Ness, Howick, Que.	184.3	4.2	193.500	51.639	1.	246.139
2nd, White Rose 2nd, H. and J. McKee, Norwich	149.4	4.9	183.000	41.772	.....	224.772
3rd, Star's Sarah, H. & J. McKee, Norwich	146.8	4.7	172.475	41.970	.....	214.44
Class 35, Sec. 2.—Ayrshire Cow, 36 months and under 48.						
1st, Townhead Swell, R. R. Ness, Howick, Que.	160.2	3.9	156.375	41.893	1.	199.068
2nd, Scottie's Victoria, H. & J. McKee, Norwich	135.9	4.4	149.475	35.062	2.	186.537
3rd, Burnside Moss Rose, R. R. Ness, Howick, Que.	124.8	3.7	140.425	32.197	.....	172.622
4th, Scottie's Nancy, H. & J. McKee, Norwich	107.5	4.1	110.175	29.540	4.	143.715
Class 35, Sec. 3.—Ayrshire Heifer, under 36 months.						
1st, Barcheskie Lady Pride, R. R. Ness, Howick, Que.	111.4	3.8	105.850	29.075	6.	140.925
2nd, Burnside Moss Rose 3rd, A. Cameron, Howick, Que.	110.5	4.	110.500	29.801	.....	140.301
3rd, Burnside Pearl 4th, R. R. Ness, Howick, Que.	104.2	4.	104.200	26.539	7.	137.739
4th, Scottie's Dandy 2nd, H. & J. McKee, Norwich	94.8	4.2	99.525	27.188	4.	130.713
Class 36, Sec. 1.—Holstein Cow, 48 months and over.						
1st, Lady Minto of Ormstown, N. Sangster, Ormstown	220.6	3.2	176.475	53.142	1.	230.599
2nd, Eloise DeKol Netherland, H. Bollert, Cassel	184.9	3.9	180.275	49.476	.....	229.751
3rd, Verona, N. Sangster, Ormstown	209.2	3.3	172.575	49.108	.....	221.683
4th, Pauline Posch, N. Sangster, Ormstown	220.4	2.9	159.775	51.507	.....	211.282
Class 36, Sec. 2.—Holstein Cow, 36 months and under 48.						
1st, Colantha of Ormstown, N. Sangster, Ormstown	208.4	3.1	161.500	51.641	1.	214.141
2nd, Maple Grove, Tidy Pauline, H. Bollert, Cassel	154.6	3.4	131.400	40.443	1.	172.843
3rd, Empress Josephine 2nd, R. A. Heron, Billing's Bridge	133.8	3.9	130.450	36.680	.....	165.130
Class 36, Sec. 3.—Holstein Heifer, under 36 months.						
1st, Dot of Elmwood, R. J. Kelly, Tillsonburg	170.4	3.3	140.575	43.707	3.	187.282
2nd, May Pink, R. Dowler, Billing's Bridge	135.1	3.5	118.200	34.612	3.	155.812
3rd, Maple Grove Minnie, C. Bollert, Tavistock	104.3	3.6	93.850	27.566	3.	124.416
Class 37, Sec. 1.—Shorthorn Cow, 48 months and over.						
1st, Lady Morning Glory, A. H. Foster, Twin Elm	134.9	3.3	111.275	36.625	1.	148.900

Class 37, Sec. 2.—Shorthorn Cow, 36 months and under 48.						
1st, Dairy Maid, A. H. Foster, Twin Elm	133.	3.3	109.725	36.109	.....	145.834
Class 37, Sec. 3.—Shorthorn Heifer, under 36 months.						
1st, Dairy Queen, A. H. Foster, Twin Elm	99.1	4.	99.100	24.943	.....	124.043
Class 39, Sec. 1.—Jersey Cow, 48 months and over.						
1st, Brampton Island Pearl, B. H. Bull & Son, Brampton	126.1	4.8	151.300	36.127	.....	187.427
2nd, Tony of Bellair, E. Paradis, Cumming's Bridge	119.4	5.	149.250	35.963	.....	185.213
3rd, Aristocratic Fanny, B. H. Bull & Son, Brampton	112.	4.9	137.200	28.560	10.	175.760
4th, Rushton Daisy, E. Paradis, Cumming's Bridge	104.	5.	130.000	30.295	10.	170.295
Class 39, Sec. 2.—Jersey Cow, 36 months and under 48,						
1st, Maude Adams, B. H. Bull & Son, Brampton	107.8	5.2	140.125	30.076	.....	170.201
2nd, Rosaly of Rideau Farm, E. Paradis, Cumming's Bridge	87.3	5.5	120.025	25.168	4.	149.193
3rd, Princess of Rideau Farm, E. Paradis, Cumming's Bridge	96.4	4.8	115.675	26.808	6.	148.483
4th, Brampton Orange, B. H. Bull & Son, Brampton	92.9	5.	116.125	25.891	6.	148.016
Class 39, Sec. 3.—Jersey Heifer, under 36 months.						
1st, Brampton Fontaine Rose, B. H. Bull & Son, Brampton	71.1	6.2	110.200	20.796	10.	140.996
2nd, Brampton Lady George, B. H. Bull & Son, Brampton	86.8	4.2	91.125	23.774	10.	124.899
3rd, Pansy of Rideau Farm, E. Paradis, Cumming's Bridge	76.8	4.7	90.225	21.957	4.	116.182
4th, Brampton May Collins, B. H. Bull & Son, Brampton	59.6	4.9	73.000	17.021	.....	90.021
Class 40, Sec. 1.—Grade Cow, 48 months and over.						
1st, Dora, N. Sangster, Ormstown, Que.	211.9	3.2	169.50	53.589	.....	223.089
2nd, Roselle, R. A. Heron, Billing's Bridge	160.4	3.9	156.375	42.441	.....	198.816
3rd, Floss, R. A. Heron, Billing's Bridge	145.9	3.9	142.250	40.355	4.	186.605
Class 40, Sec. 2.—Grade Cow, 36 months and under 48.						
1st, Dina, A. H. Foster, Twin Elm	105.8	4.3	113.725	29.264	.....	142.989
2nd, Spot, R. A. Heron, Billing's Bridge	112.8	3.5	98.700	29.745	10.	138.445
Class 40, Sec. 3.—Grade Heifer, under 36 months.						
1st, Tiny, R. A. Heron, Billing's Bridge	139.4	4.2	146.350	37.805	.....	183.355
2nd, Beauty, R. A. Heron, Billing's Bridge	129.2	4.2	135.650	36.201	4.	175.851
3rd, Blackey, C. Bollert, Tavistock	109.1	4.1	111.825	27.525	1.	140.350
4th, Flo, R. A. Heron, Billing's Bridge	78.7	4.3	84.600	20.068	4.	105.068

SHEEP.

COTSWOLDS.

Wether, under 1 year.

1st and 3rd, E. Brien & Sons, Ridgetown; 2nd, L. Parkinson, Guelph.

Three Wethers, under 1 year.

1st and 3rd, E. Brien & Sons, Ridgetown; 2nd, L. Parkinson, Guelph.

Ewe, under 1 year.

1st, 2nd and 3rd, E. Brien & Sons, Ridgetown.

Three Ewes, under 1 year.

1st and 2nd, E. Brien & Sons, Ridgetown.

Dressed Carcass Wether, under 1 year.

1st, L. Parkinson, Guelph; 2nd, E. Brien & Sons, Ridgetown.

LINCOLNS.

Wether, under 1 year.

1st, 2nd and 3rd, E. Brien & Sons, Ridgetown.

Three Wethers, under 1 year.

1st and 3rd, E. Brien & Sons, Ridgetown; 2nd, L. Parkinson, Guelph.

Ewe, under 1 year.

1st, 2nd and 3rd, E. Brien & Sons, Ridgetown.

Three Ewes, under 1 year.

1st and 2nd, E. Brien & Sons, Ridgetown; 3rd, L. Parkinson, Guelph.

Dressed Careass, Wether, under 1 year.

1st, L. Parkinson, Guelph; 2nd, E. Brien & Sons, Ridgetown.

LEICESTERS.

Wether, under 1 year.

1st, 2nd and 3rd, A. & W. Whitelaw, Guelph.

Three Wethers, under 1 year.

1st, A. & W. Whitelaw, Guelph; 2nd, E. Brien & Sons, Ridgetown.

Ewe, under 1 year.

1st, 2nd and 3rd, A. & W. Whitelaw, Guelph.

Three Ewes, under 1 year.

1st and 2nd, A. & W. Whitelaw, Guelph; 3rd, E. Brien & Sons.

Dressed Carcass, Wether, under 1 year.

1st and 2nd, A. & W. Whitelaw, Guelph.

OXFORDS.

Wether, under 1 year.

1st, 2nd and 3rd, J. W. Lee & Sons, Simcoe.

Three Wethers, under 1 year.

1st and 2nd, J. W. Lee & Sons, Simcoe; 3rd, E. Brien & Sons, Ridgetown.

Ewe, under 1 year.

1st, 2nd and 3rd, J. W. Lee & Sons, Simcoe; 4th and 5th, E. Brien & Sons, Ridgetown.

Three Ewes, under 1 year.

1st, J. W. Lee & Sons, Simcoe; 2nd, E. Brien & Sons, Ridgetown.

Dressed Carcass, Wether, under 1 year.

1st and 2nd, J. W. Lee & Sons, Simcoe.

SHROPSHIRES.

Wether, under 1 year.

1st, 2nd and 3rd, J. & D. J. Campbell, Woodville.

Three Wethers, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd and 3rd, J. Lloyd-Jones, Burford.

Ewe, under 1 year.

1st, J. Lloyd-Jones, Burford; 2nd and 3rd, J. & D. J. Campbell, Woodville.

Three Ewes, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd and 3rd, J. Lloyd-Jones, Burford.

Dressed Carcass, Wether, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd and 3rd, J. Lloyd-Jones, Burford.

SOUTHDOWNS.

Wether, under 1 year.

1st, 2nd and 3rd, J. Lloyd-Jones, Burford; 4th and 5th, Geo. Baker, Simcoe

Three Wethers, under 1 year.

1st, J. Lloyd-Jones, Burford; 2nd, George Baker, Simcoe.

Ewe, under 1 year.

1st, 2nd and 3rd, George Baker, Simcoe; 4th and 5th, J. Lloyd-Jones, Burford.

Three Ewes, under 1 year.

1st and 2nd, George Baker, Simcoe; 3rd, J. Lloyd-Jones, Burford.

Dressed Carcass, Wether, under 1 year.

1st and 2nd, J. Lloyd-Jones, Burford.

DORSET HORNS.

Wether, under 1 year.

1st, 2nd and 3rd, R. H. Harding, Thorndale.

Three Wethers, under 1 year.

1st, R. H. Harding, Thorndale.

Ewe, under 1 year.

1st, 2nd and 3rd, R. H. Harding, Thorndale.

Three Ewes, under 1 year.

1st, R. H. Harding, Thorndale.

Dressed Carcass, Wether, under 1 year.

1st, R. H. Harding, Thorndale.

HAMPSHIRES OR SUFFOLKS.

Wether, under 1 year.

1st, 2nd and 3rd, J. W. Lee & Sons, Simcoe.

Dressed Carcass, Wether, under 1 year.

1st and 2nd, J. W. Lee & Sons, Simcoe.

GRADES AND CROSSES.

Wether, under 1 year.

1st, J. & D. J. Campbell, Woodville; 2nd, A. & W. Whitelaw, Guelph; 3rd, E. Brien & Sons, Ridgetown; 4th, J. Lloyd-Jones, Burford.

Three Wethers, under 1 year.

1st, A. & W. Whitelaw, Guelph; 2nd, J. & D. J. Campbell, Woodville; 3rd, E. Brien & Sons, Ridgetown; 4th, J. Lloyd-Jones, Burford; 5th, Geo. Baker, Simcoe.

Ewe, under 1 year.

1st, E. Brien & Sons, Ridgetown; 2nd, A. A. Armstrong, Fergus; 3rd and 4th, George Baker, Simcoe; 5th, A. & W. Whitelaw, Guelph.

Three Ewes, under 1 year.

1st, George Baker, Simcoe; 2nd, A. & W. Whitelaw; 3rd, J. & D. J. Campbell, Woodville.

Dressed Carcass, Wether, under 1 year.

1st, George Baker, Simcoe; 2nd, J. Lloyd-Jones, Burford.

SWINE.

YORKSHIRES.

Barrow, 6 months and under 9.

1st and 2nd, Jos. Featherston & Son, Streetsville; 3rd and 4th, J. E. Brethour & Nephews, Burford; 5th and 6th, Alex. Dynes, Ottawa.

Barrow, under 6 months.

1st and 5th, Jos. Featherston & Son, Streetsville; 2nd, 3rd and 4th, J. E. Brethour & Nephews, Burford; 6th, Alex. Dynes, Ottawa.

Sow, 6 months and under 9.

1st, 4th and 5th, J. E. Brethour & Nephews, Burford; 2nd and 3rd, Jos. Featherston & Son, Streetsville; 6th, Alex. Dynes, Ottawa.

Sow, under 6 months.

1st and 2nd, J. E. Brethour & Nephews, Burford; 3rd and 6th, Jos. Featherston & Son, Streetsville; 4th, Alex. Dynes, Ottawa; 5th, A. H. Foster, Twin Elm.

BERKSHIRES.

Barrow, 6 months and under 9.

1st, E. Brien & Sons, Ridgetown.

Barrow, under 6 months.

1st, 2nd and 3rd, E. Brien & Sons, Ridgetown; 4th, R. A. Heron, Billings Bridge.

Sow, 6 months and under 9.

1st, E. Brien & Sons, Ridgetown; 2nd, McDougall & Bedlow, Fairfield, East; 3rd and 4th, Wm. A. Wallace, Kars; 5th, Alex. Dynes, Ottawa.

Sow, under 6 months.

1st and 2nd, E. Brien & Sons, Ridgetown; 3rd and 4th, Alex. Dynes, Ottawa; 5th, McDougall & Bedlow, Fairfield East; 6th, Wm. A. Wallace, Kars.

TAMWORTHS.

Barrow, 6 months and under 9.

1st and 2nd, Alex. Dynes, Ottawa.

Barrow, under 6 months.

1st, 2nd, 3rd and 4th, Alex. Dynes, Ottawa.

Sow, 6 months and under 9.

1st, J. E. Brethour, Burford; 2nd, 3rd and 4th, Alex. Dynes, Ottawa.

Sow, under 6 months.

1st and 2nd, R. Reid & Co., Ottawa; 3rd and 4th, Alex. Dynes, Ottawa.

GRADES AND CROSSES.

Barrow, 6 months and under 9.

1st and 3rd, Jos. Featherston & Son, Streetsville; 2nd, J. E. Brethour & Nephews, Burford; 4th and 5th, Alex. Dynes, Ottawa; 6th, R. A. Heron, Billings Bridge.

Barrow, under 6 months.

1st, Alex. Dynes, Ottawa; 2nd, J. E. Brethour & Nephews, Burford; 3rd, R. A. Heron, Billings Bridge; 4th and 5th, Jos. Featherston & Son, Streetsville; 6th, Wm. A. Wallace, Kars.

Sow, 6 months and under 9.

1st, J. E. Brethour & Nephews, Burford; 2nd, Jos. Featherston & Son, Streetsville; 3rd, R. A. Heron, Billings Bridge; 4th, 5th and 6th, Alex. Dynes, Ottawa.

Sow, under 6 months.

1st, J. E. Brethour & Nephews, Burford; 2nd, Alex. Dynes, Ottawa; 3rd, Jos. Featherston & Son, Streetsville; 4th, R. A. Heron, Billings Bridge; 5th and 6th, Wm. A. Wallace, Kars.

EXPORTS BACON HOGS.

Three Pure-breds.

1st and 3rd, J. E. Brethour & Nephews, Burford; 2nd, 4th and 6th, Jos. Featherston & Son, Streetsville; 5th, A. H. Foster, Twin Elm; 7th, Alex. Dynes, Ottawa.

Three Grades or Crosses.

1st, 3rd and 4th, Jos. Featherston & Son, Streetsville; 2nd, J. E. Brethour & Nephews, Burford; 5th, Wm. A. Wallace, Kars; 6th, R. A. Heron, Billings Bridge.

Sweepstake, 3 Best Export Bacon Hogs, any breed.

1st, J. E. Brethour & Nephews, Burford.

SWINE, DRESSED CARCASSES.

Three Pure-bred Bacon Hogs.

1st and 3rd, Jos. Featherston & Son, Streetsville; 2nd and 4th, J. E. Brethour & Nephews, Burford; 5th, Geo. R. Bradley, Carsonby; 6th and 7th, Alex Dynes, Ottawa.

Three Grades or Crosses, Bacon Hogs.

1st and 3rd, Jos. Featherston & Son, Streetsville; 2nd, Geo. R. Bradley, Carsonby; 4th, R. A. Heron, Billings Bridge; 5th, J. E. Brethour & Nephews, Burford.

Sweepstakes, Best Dressed Carcasses of Three Bacon Hogs.

1st, Jos. Featherston & Son, Streetville.

SPECIALS.

For Best Pen of Three Export Bacon Hogs, any breed, grade or cross.

1st, J. E. Brethour & Nephews, Burford.

For Best Yorkshire Sow, under six months.

1st, J. E. Brethour & Nephews, Burford.

SEEDS.

Fall Wheat.

1st, David Malcolm, Nestleton.
2nd, S. J. Woods, Metcalfe.
3rd, Andrew Schmidt, Mildmay.
4th, George Baker, Simcoe.

Spring Wheat.

1st, Jas. McLean, Richmond Hill.
2nd, S. J. Woods, Metcalfe.
3rd, Peter Wilson, Cobden.
4th, Thos. Shaw, Beachburg.

Banner Oats.

1st, George Boyce, Merivale.
2nd, Geo. R. Bradley, Carsonby.
3rd, S. J. Woods, Metcalfe.

Oats, any other variety, white.

1st, Andrew Schmidt, Mildmay.
2nd, D. Carmichael, West Lorne.
3rd, S. J. Woods, Metcalfe.
4th, Wm. McRostie, Springhill.

Barley, six-rowed.

1st, Andrew Schmidt, Mildmay.
2nd, D. Carmichael, West Lorne.
3rd, Jas. Snetsinger, Eamer's Corners.
4th, Peter Wilson, Cobden.

Small Field Peas.

1st, Peter Wilson, Cobden.
2nd, S. J. Woods, Metcalfe.
3rd, D. Cumming Russell.

Potatoes, Long White Type.

1st, Jas. Snetsinger, Eamer's Corners.
2nd, Geo. R. Bradley, Carsonby.

Potatoes, Round White Type.

1st, Wm. Barron, Bracebridge.
2nd, Jos. Featherston & Son, Streetville.
3rd, A. H. Foster, Twin Elm.
4th, Jas. Snetsinger, Eamer's Corners.

Potatoes, Rose Type.

1st, No. award.
2nd, D. Cumming, Russell.
3rd, Geo. R. Bradley, Carsonby.

Corn, any 8-rowed variety, Flint.

1st, L. D. Hankinson, Grovesend.
2nd, Stewart L. Pearce, Wallacetown.
3rd, E. Brien & Sons, Ridgetown.
4th, Geo. Baker, Simcoe.

Corn, any 12-rowed variety, Flint.

1st, J. S. Clark, Ridgetown.
2nd, George Baker, Simcoe.
3rd, E. Brien & Sons, Ridgetown.
4th, D. Carmichael, West Lorne.

Corn, best Early Dent Variety.

1st, W. H. Burk, Kingsville.
2nd, E. Brien & Sons, Ridgetown.
3rd, J. A. Fletcher, Valetta.
4th, L. D. Hankinson, Grovesend.

Timothy.

1st, D. Russell.

Special, Best Exhibit of White Oats, any variety, produced in 1910.

1st, George Boyce, Merivale.

POULTRY.

List gives number of entries and awards in each section. For Post Office address of exhibitor, see pages 310-320.

Light Brahmas.

Cocks, 6.—1st, W. B. Nantel; 2nd, F. H. Sauve; 3rd, C. H. Wilson.
Hens, 8.—1st and 2nd, Collins & Cornish; 3rd, W. B. Nantel.
Cockerels, 3.—1st and 3rd, F. H. Sauve, 2nd, C. H. Wilson.
Pullets, 5.—1st, F. H. Sauve; 2nd, W. B. Nantel; 3rd, C. H. Wilson.

Dark Brahmas.

Cocks, 4.—1st, W. B. Nantel; 2nd, C. H. Wilson; 3rd, M. C. Wallace.
Hens, 5.—1st, M. C. Wallace; 2nd, W. B. Nantel; 3rd, Jas. Snetsinger.
Cockerels, 5.—1st, C. H. Wilson; 2nd, P. A. McIntosh, M.D.; 3rd, J. H. Warrington.
Pullets, 6.—1st, C. H. Wilson; 2nd and 3rd, M. C. Wallace.

Buff Cochins.

Cocks, 4.—1st, T. J. Cole; 2nd, W. B. Nantel; 3rd, W. D. Halliday.
Hens, 4.—1st, W. B. Nantel; 2nd, T. J. Cole; 3rd, Deverell Bros.
Cockerels, 6.—1st, Deverell Bros.; 2nd, C. H. Wilson; 3rd, Jas. Snetsinger.
Pullets, 6.—1st, Deverell Bros.; 2nd, C. H. Wilson; 3rd, Jas. Snetsinger.

PARTRIDGE COCHINS.

Cocks, 7.—1st, T. J. Cole; 2nd, W. B. Nantel; 3rd, F. Wales.
Hens, 6.—1st, F Wales; 2nd and 3rd, W. B. Nantel.
Cockerels, 2.—1st, F. Wales; 2nd, C. H. Wilson.
Pullets, 3.—1st, F. Wales; 2nd, C. H. Wilson; 3rd, W. D. Halliday.

BLACK COCHINS

Cocks, 3.—1st and 3rd, W. D. Halliday; 2nd, W. B. Nantel.
Hens, 4.—1st, W. B. Nantel; 2nd and 3rd, W. D. Halliday.
Cockerels, 3.—1st, 2nd, 3rd, W. D. Halliday.
Pullets, 4.—1st, W. B. Nantel; 2nd and 3rd, W. D. Halliday.

WHITE COCHINS.

Cocks, 4.—1st, W. B. Nantel; 2nd, W. D. Halliday; 3rd, Harry T. Lush.
Hens, 2.—1st, W. B. Nantel; 2nd, W. D. Halliday.
Cockerels, 2.—1st, W. B. Nantel; 2nd, W. D. Halliday.
Pullets, 4.—1st, W. B. Nantel; 2nd, W. D. Halliday; 3rd, Harry T. Lush.

LANGSHANS.

Cocks, 4.—1st and 2nd, R. McCurdy; 3rd, T. J. Cole.
Hens, 4.—1st and 2nd, R. McCurdy; 3rd, T. J. Cole.
Cockerels, 3.—1st and 2nd, R. McCurdy; 3rd, T. J. Cole.
Pullets, 3.—1st and 2nd, R. McCurdy; 3rd, T. J. Cole.

BARRED PLYMOUTH ROCKS.

Cocks, 7.—1st, J. A. Lambertus; 2nd, Gunn, Langlois & Co.; 3rd, Chas. LaRose.
Hens, 7.—1st, Chas. LaRose; 2nd, J. A. Lambertus; 3rd, F. A. Armstrong.
Cockerels, 28.—1st and 2nd, Jno. Gormley; 3rd and 6th, J. A. Lambertus; 4th, F. A. James; 5th, Chas. LaRose.
Pullets, 11.—1st, F. A. James; 2nd, J. A. Lambertus; 3rd and 4th, Jas. Daly.

WHITE PLYMOUTH ROCKS.

Cocks, 4.—1st, M. A. Lathey; 2nd, Geo. Robertson; 3rd, Hintonburg Poultry Yards.
Hens, 10.—1st and 3rd, Geo. Robertson; 2nd, M. A. Lathey.
Cockerels, 7.—1st, M. A. Lathey; 2nd, Geo. Robertson; 3rd, W. J. Craig.
Pullets, 10.—1st and 3rd, M. A. Lathey; 2nd, Geo. Robertson.

BUFF PLYMOUTH ROCKS.

Cocks, 3—1st, McCaffery Bros.; 2nd, Hintonburg Poultry Yards.
Hens, 5.—1st, McCaffrey Bros.; 2nd, Hintonburg Poultry Yards; 3rd, D. B. Alexander.
Cockerels, 6.—1st and 2nd, McCaffrey Bros.; 3rd, D. B. Alexander.
Pullets, 6.—1st and 2nd, McCaffrey Bros.; 3rd, Hintonburg Poultry Yards.

GOLDEN WYANDOTTES.

Cocks, 3.—1st, Robert Patterson; 2nd, Geo. Higman, Sr.; 3rd, C. Hughes.
Hens, 4.—1st, Robert Patterson; 2nd, Geo. Higman, Sr.
Cockerels, 7.—1st, Robert Patterson; 2nd, C. Hughes; 3rd, Geo. Higman, Sr.
Pullets, 9.—1st, James Baptie; 2nd, C. Hughes; 3rd, Geo. Higman, Sr.

SILVER WYANDOTTES.

Cocks, 4.—1st and 3rd, Hintonburg Poultry Yards; 2nd, Robert Patterson.
Hens, 4.—1st, 2nd and 3rd, Hintonburg Poultry Yards.
Cockerels, 5.—1st, 2nd and 3rd, Hintonburg Poultry Yards.
Pullets, 6.—1st and 3rd, James Baptie; 2nd, Hintonburg Poultry Yards.

BUFF WYANDOTTES.

Cocks, 2.—1st and 2nd, J. Mason & Son.
Hens, 3.—1st, 2nd and 3rd, J. Mason & Son.
Cockerels, 6.—1st and 2nd, J. Mason & Son; 3rd, R. E. Blakely.
Pullets, 3.—1st, 2nd and 3rd, J. Mason & Son.

WHITE WYANDOTTES.

Cocks, 14.—1st and 3rd, Highland Park Poultry Yards; 2nd, G. Lake; 4th, Geo. Higman, Sr.
Hens, 17.—1st, Highland Park Poultry Yards; 2nd, G. Shaw; 3rd, Hintonburg Poultry Yards; 4th, G. Lake; 5th, Geo. Higman, Sr.
Cockerels, 19.—1st, Geo. Higman, Sr.; 2nd, Joseph Russell; 3rd, Highland Park Poultry Yards; 4th, Mrs. W. Croshaw; 5th, G. Lake.
Pullets, 15.—1st, Highland Park Poultry Yards; 2nd, Geo. Gallipeau; 3rd, G. Lake; 4th, Geo. Higman, Sr.

PARTRIDGE WYANDOTTES.

Cocks 5.—1st, Geo. Higman, Jr.; 2nd and 3rd, Adams Bros.
Hens, 9.—1st and 3rd, Adams Bros.; 2nd, Geo. Higman, Jr.
Cockerels, 8.—1st, Adams Bros.; 2nd and 3rd, Geo. Higman, Jr.
Pullets, 9.—1st and 2nd, Adams Bros.; 3rd, Geo. Higman, Jr.

COLUMBIAN WYANDOTTES.

Cocks, 4.—1st and 3rd, W. Pianschke; 2nd, G. F. Wadsworth.
Hens, 5.—1st and 3rd, W. Pianschke; 2nd, G. F. Wadsworth.
Cockerels, 10.—1st, 3rd and 4th, G. F. Wadsworth; 2nd, W. Pianschke.
Pullets, 9.—1st, W. Pianschke; 2nd and 3rd, G. F. Wadsworth.

BLACK WYANDOTTES.

Cocks, 2.—1st, P. A. McIntosh; 2nd, Hintonburg Poultry Yards.
Hens, 3.—1st, 2nd and 3rd, Hintonburg Poultry Yards.
Pullets, 3.—1st and 2nd, Hintonburg Poultry Yards; 3rd, P. A. McIntosh.

A. O. V. WYANDOTTES.

Cocks, 3.—1st and 3rd, Robert Patterson; 2nd, W. D. Halliday.
Hens, 3.—1st, Robt. Patterson; 2nd, W. D. Halliday.
Cockerels, 2.—1st and 2nd, Robt. Patterson.
Pullets, 3.—1st, 2nd and 3rd, Robt. Patterson.

BLACK JAVAS.

Cocks, 2.—1st, T. J. Cole; 2nd, C. W. McLean.
Hens, 3.—1st, T. J. Cole; 2nd, Point Fortune Poultry Yards.
Cockerels, 3.—1st, T. J. Cole; 2nd, C. W. McLean; 3rd, Point Fortune Poultry Yards.
Pullets, 3.—1st, Point Fortune Poultry Yards; 2nd, T. J. Cole; 3rd, C. W. McLean.

R. C. RHODE ISLAND REDS.

Cocks, 7.—1st, C. Vogt; 2nd, Wm. Moore; 3rd, John I. Gill.
Hens, 7.—1st, John I. Gill; 2nd, C. Vogt; 3rd, Wm. Moore.
Cockerels 14.—1st, Herbert H. Dowton; 2nd, C. Vogt; 3rd, Hintonburg Poultry Yards; 4th, John Storey.
Pullets, 15.—1st, C. Vogt; 2nd, 3rd and 4th, Hintonburg Poultry Yards.

S. C. RHODE ISLAND REDS.

Cocks, 6.—1st, Gunn, Langlois Company; 2nd, Hintonburg Poultry Yards; 3rd, John Storey.
Hens 7.—1st, Hintonburg Poultry Yards; 2nd, Gunn, Langlois & Co.; 3rd, J. A. Grimes.
Cockerels, 13.—1st aud 3rd, Gunn, Langlois & Co.; 2nd, C. Vogt; 4th, Hintonburg Poultry Yards.
Pullets, 11.—1st, Chas. Sawden; 2nd, C. Vogt; 3rd, J. A. Grimes.

B. B. RED GAMES.

Cocks, 1.—1st, W. Barber.
Hens, 4.—1st, W. Barber; 2nd, J. Lawson; 3rd, Point Fortune Poultry Yards.
Cockerels, 6.—1st, W. Barber; 2nd and 3rd, J. Lawson.
Pullets, 5.—1st, W. Barber; 2nd, J. Lawson; 3rd, W. D. Halliday.

BROWN RED GAMES.

Cocks, 2.—1st and 2nd, W. Barber.
Hens, 2.—1st and 2nd, W. Barber.
Cockerels, 2.—1st and 2nd, W. Barber.
Pullets, 2.—1st and 2nd, W. Barber.

DUCKWING GAMES.

Cocks, 2.—1st and 2nd, W. Barber.
Hens, 2.—1st and 2nd, W. Barber.
Cockerels, 2.—1st and 2nd, W. Barber.
Pullets, 2.—1st and 2nd, W. Barber.

PYLE GAMES.

Cocks, 3.—1st, W. Barber; 2nd and 3rd, P. A. McIntosh.
Hens, 4.—1st, W. Barber; 2nd and 3rd, P. A. McIntosh.
Cockerels, 3.—1st and 2nd, P. A. McIntosh; 3rd, W. Barber.
Pullets, 3.—1st, W. Barber; 2nd and 3rd, P. A. McIntosh.

C. INDIAN GAMES (LACED).

Cocks, 4.—1st, Chas. LaRose; 2nd, J. Pritchard; 3rd, Point Fortune Poultry Yards.
Hens, 6.—1st and 1nd, Chas. LaRose; 3rd, J. Pritchard.
Cockerels, 4.—1st, Chas. LaRose; 2nd and 3rd, J. Pritchard.
Pullets, 5.—1st and 2nd, Chas. LaRose; 3rd, Point Fortune Poultry Yards.

A. O. S. V. OR W. INDIAN GAMES.

Cocks, 3.—1st, J. H. Warrington; 2nd, W. Barber; 3rd, Point Fortune Poultry Yards.
Hens, 4.—1st, W. Barber; 2nd, J. H. Warrington; 3rd, Point Fortune Poultry Yards.
Cockerels, 4.—1st and 2nd, W. Barber; 3rd, J. H. Warrington.
Pullets, 5.—1st and 2nd, W. Barber; 3rd, J. H. Warrington.

OLD ENGLISH OR PIT GAMES.

Cocks, 7.—1st and 2nd, F. Rock; 3rd, Geo. Craig.
Hens, 7.—1st, Jas. Snetsinger; 2nd, Geo. Craig; 3rd, F. Rock.
Cockercls, 8.—1st, Jas. Snetsinger; 2nd, Geo Craig; 3rd, F. Rock.
Pullets, 8.—1st and 2nd, F. Rock; 3rd, Geo. Craig.

S. C. WHITE LEGHORN.

Cocks, 12.—1st, Donald McKellar; 2nd, F. D. Marsh; 3rd, F. Wales; 4th, Glenholme Farm.
Hens, 23.—1st and 3rd, Donald McKellar; 2nd, W. H. Carleton; 4th, F. D. Marsh; 5th, Glenholme Farm.
Cockerels, 28.—1st, G. Lake; 2nd, D. McKellar; 3rd, W. H. Carleton; 4th, Glenholme Farm; 5th, F. D. Marsh.
Pullets, 30.—1st and 9th, F. Wales; 2nd and 6th, D. McKellar; 3rd, W. H. Carleton; 4th, 5th and 10th, Glenholme Farm; 7th and 8th F. D. Marsh.

S. C. BROWN LEGHORNS.

Cocks, 7.—1st, Jas. A. Elgie; 2nd, Collins & Cornish; 3rd, F. D. Marsh.
Hens, 11,—1st, J. B. A. Roy; 2nd Jas. A. Elgie; 3rd, F. D. Marsh.
Cockerels, 12.—1st, 2nd and 4th, Collins & Cornish; 3rd, Jas. A. Elgie.
Pullets, 14.—1st, Collins & Cornish; 2nd and 3rd, Jas. A. Elgie; 4th, F. D. Marsh.

S. C. BLACK LEGHORN.

Cocks, 5.—1st and 2nd, Jno. A. Belford; 3rd, Wm. Osborne.
Hens, 9.—1st, Wm. Oshorne; 2nd, F. H. Gallinger; 3rd, J. H. Warrington.
Cockerels, 11.—1st and 2nd, Jno. A. Belford; 3rd, Wm. Osborne.
Pullets, 10.—1st and 3rd, Wm. Osborne; 2nd, Jno. A. Belford.

S. C. Buff Leghorn.

Cocks, 5.—1st, Gillespie Bros.; 2nd, D. B. Alexander, M.D.; 3rd, S. E. Ellis.
Hens, 6.—1st, and 2nd, S. E. Ellis; 3rd, D. B. Alexander.
Cockerels, 12.—1st and 2nd, D. B. Alexander, M.D.; 3rd, Gillespie Bros.; 4th, Jas. Snetsinger.
Pullets, 10.—1st and 3rd, S. E. Ellis; 2nd, D. B. Alexander, M.D.

Silver Duckwing. Leghorn.

Cocks, 2.—1st and 2nd, M. R. Milroy.
Hens, 3.—1st, 2nd and 3rd, M. R. Milroy.
Pullets, 1.—1st, M. R. Milroy.

R. C. Brown Leghorns.

Cocks, 2.—1st, C. H. Wilson; 2nd, P. A. McIntosh, M.D.
Hens, 2.—1st, C. H. Wilson; 2nd, P. A. McIntosh.
Cockerels, 2.—1st, C. H. Wilson; 2nd, P. A. McIntosh.
Pullets, 2.—1st, C. H. Wilson; 2nd, P. A. McIntosh.

A. O. S. V., R. C. Leghorns.

Cocks, 3.—1st, James Snetsinger; 2nd, C. H. Wilson.
Hens, 4.—1st, James Snetsinger; 2nd, C. H. Wilson; 3rd, M. R. Hoover.
Cockerels, 6.—1st M. R. Hoover; 2nd, C. H. Wilson; 3rd, D. Cumming.
Pullets, 7.—1st, D. Cumming; 2nd, J. Pritchard; 3rd, M. R. Hoover.

Spanish.

Cocks, 3.—1st and 3rd, Jas. Snetsinger; 2nd, C. W. McLean.
Hens, 5.—1st and 2nd, J. H. Warrington; 3rd, James Snetsinger.
Cockerels, 2.—1st and 2nd, Jas. Snetsinger.
Pullets, 2.—1st and 2nd, Jas. Snetsinger.

Anconas.

Cocks, 2.—1st, A. C. McCulloch; 2nd, L. Cabana.
Hens, 2.—1st and 2nd, A. C. McCulloch.
Cockerels, 3.—1st and 2nd, A. C. McCulloch.
Pullets, 4.—1st and 2nd, A. C. McCulloch; 3rd, L. Cabana.

Andalusians.

Cocks, 5.—1st and 3rd, E. S. Baker; 2nd, H. V. Cash.
Hens, 11.—1st, Chas. LaRose; 2nd, A. A. Casselman; 3rd, E. S. Baker.
Cockerels, 16.—1st, Chas. LaRose; 2nd, H. V. Cash; 3rd, Jno. Gunning; 4th, E. S. Baker.
Pullets, 12.—1st, Chas. LaRose; 2nd, 3rd and 4th, A. A. Casselman.

Black Minorca.

Cocks, 8.—1st and 2nd, E. R. Frith; 3rd, Wm. Ellis.
Hens, 9.—1st and 2nd, Hintonburg Poultry Yards; 3rd, L. V. Zavitz.
Cockerels, 23.—1st, 3rd and 5th, L. V. Zavitz; 2nd, Hintonburg Poultry Yards; 4th, Wm. Ellis.
Pullets, 21.—1st, 2nd, 3rd and 5th, L. V. Zavitz; 4th, Hintonburg Poultry Yards.

White Minorcas.

Cocks, 4.—1st, E. A. Bock; 2nd, Wm. Osborne; 3rd, P. A. McIntosh, M.D.
Hens, 8.—1st and 2nd, E A. Bock; 3rd, J. A. & M. Benson.
Cockerels, 4.—1st and 2nd, E. A. Bock; 3rd, J. A. & M. Benson.
Pullets, 4.—1st, J. A. & M. Benson; 2nd, Wm. Osborne.

Buff Orpingtons.

Cocks, 5.—1st, McDougall & Bedlow; 2nd, Jno. Grant; 3rd, D. B. Alexander, M.D.
Hens, 6.—1st and 3rd, A. W. E. Hellyer; 2nd, McDougall & Bedlow.
Cockerels, 21.—1st, 2nd and 5th, A. W. E. Hellyer; 3rd, McDougall & Bedlow; 4th, D. B. Alexander, M.D.
Pullets, 12—1st, 2nd and 3rd, A. W. E. Hellyer; 4th, McDougall & Bedlow.

WHITE ORPINGTONS.

Cocks, 5.—1st, Hintonburg Poultry Yards; 2nd, Jas. Snetsinger.
Hens, 5.—1st, Jas. Snetsinger; 2nd, Hintonburg Poultry Yards.
Cockerels, 13.—1st, 2nd and 3rd, S. K. Burdin; 4th, F. H. Gisborne.
Pullets, 14.—1st, James Snetsinger; 2nd, J. Ross Thomson; 3rd, F. H. Gisborne; 4th, S. K. Burdin.

A. O. V. ORPINGTONS.

Cocks 6.—1st and 2nd, Hamilton & Scyne; 3rd, Hintonburg Poultry Yards.
Hens, 12.—1st and 4th, Jno. Baum; 2nd, Ed. Lawless; 3rd, Hamilton & Scyne.
Cockerels, 15.—1st and 3rd, Hamilton & Scyne; 4th, Rev. G. E. Fletcher; 2nd, Deverell Bros.
Pullets, 16.—1st, Jno. Baum; 2nd, Rev. G. E. Fletcher; 3rd and 4th, Hamilton & Scyne.

SILVER GREY DORKING.

Cocks, 3.—1st, Jas. Snetsinger; 2nd, Point Fortune Poultry Yards; 3rd, P. A. McIntosh, M.D.
Hens, 3.—1st, Point Fortune Poultry Yards; 2nd, Jas. Snetsinger.
Cockerels, 3.—1st, McDougall & Bedlow; 2nd, Jas. Baptie; 3rd, P. A. McIntosh, M.D.
Pullets, 5.—1st, Jas. Snetsinger; 2nd, P. A. McIntosh, M.D.; 3rd, McDougall & Bedlow.

COLORED DORKINGS.

Cocks 3.—1st, Jas. Snetsinger; 2nd, J. H. Warrington; 3rd, Jas. Baptie.
Hens, 4.—1st and 2nd, Jas. Snetsinger; 3rd, Jas. Baptie.
Cockerels, 2.—1st and 2nd, J. H. Warrington.
Pullets, 2.—1st and 2nd, J. H. Warrington.

WHITE DORKINGS.

Cocks, 1.—1st, J. H. Warrington.
Hens, 2.—1st and 2nd, J. H. Warrington.
Cockerels, 1.—1st, J. H. Warrington.
Pullets, 2.—1st and 2nd, J. H. Warrington.

HOUDANS.

Cocks, 3.—1st, McDougall & Bedlow; 2nd, W. D. Halliday; 3rd, P. A. McIntosh, M.D.
Hens, 3.—1st, McDougall & Bedlow; 2nd, P. A. McIntosh, M.D.; 3rd, W. D. Halliday.
Cockerels, 3.—1st, McDougall & Bedlow; 2nd, P. A. McIntosh, M.D.; 3rd, W. D. Halliday.
Pullets, 3.—1st, P. A. McIntosh, M.D.; 2nd, McDougall & Bedlow; 3rd, W. D. Halliday.

CREVE COEURS.

Hens, 1.—1st, J. H. Warrington.

LA FLECHE.

Cocks, 1.—1st, J. H. Warrington.
Hens, 1.—1st, J. H. Warrington.
Cockerels, 1.—1st, Richard Oke.
Pullets, 1.—1st, Richard Oke.

BLACK HAMBURGS.

Cocks, 5.—1st and 3rd, Jas. Baptie; 2nd, Point Fortune Poultry Yards.
Hens, 5.—1st, Richard Oke; 2nd and 3rd, Jas. Baptie.
Cockerels, 7.—1st, Richard Oke; 2nd, Point Fortune Poultry Yards; 3rd, Harry T. Lush.
Pullets, 10.—1st and 3rd, Richard Oke; 2nd, Jno. Baum.

GOLDEN PENCILLED HAMBURGS.

Cocks, 3.—1st, Richard Oke; 2nd, M. C. Wallace; 3rd, Point Fortune Poultry Yards.
Hens, 4.—1st and 2nd, Richard Oke; 3rd, M. C. Wallace.
Cockerels, 4.—1st and 2nd, Richard Oke; 3rd, Point Fortune Poultry Yards.
Pullets, 5.—1st and 2nd, Richard Oke; 3rd, Point Fortune Poultry Yards.

SILVER PENCILLED HAMBURGS.

Cocks, 2.—1st, Richard Oke; 2nd, Point Fortune Poultry Yards.
Hens, 2.—1st, Richard Oke; 2nd, Point Fortune Poultry Yards.
Cockerels, 2.—1st, Richard Oke; 2nd, Point Fortune Poultry Yards.
Pullets, 3.—1st and 2nd, Richard Oke; 3rd, Point Fortune Poultry Yards.

GOLDEN SPANGLED HAMBURGS.

Cocks, 4.—1st, Harry T. Lush; 2nd and 3rd, Jas. Baptie.
Hens, 5.—1st and 2nd, Jas. Baptie; 3rd, Harry T. Lush.
Cockerels, 6.—1st, Richard Oke; 2nd and 3rd, Jas. Baptie.
Pullets, 6.—1st, Richard Oke. 2nd and 3rd, Jas. Baptie.

SILVER SPANGLED HAMBURGS.

Cocks, 5.—1st, Richard Oke; 2nd, Jas. Baptie; 3rd, Harry T. Lush.
Hens 5—1st Richard Oke; 2nd and 3rd, Harry T. Lush.
Cockerels, 11.—1st, Jas. Baptie; 2nd, Richard Oke; 3rd, D. Cumming.
Pullets, 9.—1st, Jas. Baptie; 2nd, Richard Oke; 3rd, Jas. Baptie.

RED CAPS.

Cocks, 4.—1st, J. H. Warrington; 2nd, P. A. McIntosh, M.D.; 3rd, Wm. Moore.
Hens, 5.—1st, Jas. Snetsinger; 2nd, P. A. McIntosh, M.D.; 3rd, J. H. Warrington.
Cockerels, 3.—1st, Jas. Snetsinger; 2nd, Wm. Moore; 3rd, P. A. McIntosh, M.D.
Pullets, 4.—1st, Jas. Snetsinger; 2nd, Wm. Moore; 3rd, P. A. McIntosh, M.D.

W. C. B. POLANDS.

Cocks, 3.—1st, Wm. McNeil; 2nd, Point Fortune Poultry Yards.
Hens, 5.—1st, Wm. McNeil; 2nd, Point Fortune Poultry Yards; 3rd, Wm. McNeil.
Cockerels, 4.—1st, 2nd and 3rd, Wm. McNeil.
Pullets, 4.—1st, 2nd and 3rd, Wm. McNeil.

GOLDEN BEARDED POLANDS.

Cocks, 3.—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.
Hens, 3.—1st and 3rd, Wm. McNeil; 2nd, Point Fortune Poultry Yards.
Cockerels, 4.—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.
Pullets, 4.—1st and 2nd, Wm. McNeil; 3rd, Chas. Sawden.

GOLDEN UNBEARDED POLANDS.

Cocks, 4.—1st, Wm. McNeil; 2nd, J. H. Warrington; 3rd, Point Fortune Poultry Yards.
Hens, 3.—1st and 3rd, Wm. McNeil; 2nd, Point Fortune Poultry Yards.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Pullets, 2.—1st and 2nd, Wm. McNeil.

SILVER BEARDED POLANDS.

Cocks, 3.—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.
Hens, 3.—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, Point Fortune Poultry Yards.

SILVER UNBEARDED POLANDS.

Cocks, 2.—1st and 2nd, Wm. McNeil.
Hens, 2.—1st and 2nd, Wm. McNeil.
Cockerels, 1.—1st, Wm. McNeil.
Pullets, 2.—1st and 2nd, Wm. McNeil.

WHITE POLANDS.

Cocks, 4.—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Hens, 4.—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, P. A. McIutosh, M.D.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, P. A. McIntosh, M.D.

WHITE BEARDED POLANDS.

Cocks, 2.—1st and 2nd, Wm. McNeil.
Hens, 3.—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Cockerels, 3.—1st and 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Pullets, 2.—1st and 2nd, Wm. McNeil.

BUFF LACED BEARDED POLANDS.

Cocks, 2.—1st and 2nd, Wm. McNeil.
Hens, 3.—1st, J. H. Warrington; 2nd and 3rd, Wm. McNeil.
Cockerels, 2.—1st, Wm. McNeil.
Pullets, 2.—1st and 2nd, Wm. McNeil.

A. O. V. FOWL.

Cocks, 4.—1st, Alex. McBride; 2nd, Wm. McNeil; 3rd, Mason & Son.
Hens, 6.—1st, Mason & Son; 2nd, Wm. McNeil; 3rd, J. H. Warrington.
Cockerels, 4.—1st, J. H. Warrington; 2nd, Mason & Son; 3rd, R. E. Blakely.
Pullets, 5.—1st, Mason & Son; 2nd, Wm. McNeil; 3rd, R. E. Blakely.

BLACK RED GAME BANTAMS.

Cocks, 4.—1st, W. Barber; 2nd, Rook Bros.; 3rd, P. A. McIntosh, M.D.
Hens, 3.—1st, W. Barber; 2nd and 3rd, Rook Bros.
Cockerels, 4.—1st, W. Barber; 2nd and 3rd, Rook Bros.
Pullets, 6.—1st, W. Barber; 2nd and 3rd, Rook Bros.

BROWN RED GAME BANTAM.

Cocks, 1.—1st, Rook Bros.
Hens, 1.—1st, Rook Bros.
Cockerels, 1.—1st, Rook Bros.
Pullets, 2.—1st and 2nd, Rook Bros.

DUCKWING GAME BANTAM.

Cocks, 3.—1st, Wm. Barber; 2nd and 3rd, Rook Bros.
Hens, 4.—1st and 2nd, W. Barber; 3rd, Rook Bros.
Cockerels, 4.—1st and 2nd, W. Barber; 3rd, Rook Bros.
Pullets, 4.—1st and 2nd, Wm. Barber; 3rd, Rook Bros.

BANTAM PYLE GAME.

Cocks, 3.—1st, W. Barber; 2nd and 3rd, Rook Bros.
Hens, 3.—1st, W. Barber; 2nd and 3rd, Rook Bros.
Cockerels, 4.—1st and 3rd, W. Barber; 2nd, Rook Bros.
Pullets, 3.—1st, Rook Bros.; 2nd and 3rd, W. Barber.

A. O. V. GAME BANTAMS.

Cocks, 3.—1st, Rook Bros.; 2nd, J. Mason & Son; 3rd, Marguerite Armstrong.
Hens, 3.—1st, Rook Bros.; 2nd, J. Mason & Son; 3rd, Marguerite Armstrong.
Cockerels, 2.—1st, Rook Bros.; 2nd, Harry T. Lush.
Pullets, 2.—1st, Rook Bros.; 2nd, Harry T. Lush.

GOLDEN SEBRIGHT BANTAMS.

Cocks, 2.—1st, Chas. LaRose.

SILVER SEBRIGHT BANTAMS.

Cocks, 1.—1st, Chas. La Rose.
Cockerels, 1.—1st, Harry T. Lush.

WHITE ROSE COMB BANTAMS.

Cocks, 2.—1st and 2nd, Richard Oke.
Hens, 2.—1st and 2nd, Richard Oke.
Cockerels, 3.—1st and 2nd, Richard Oke; 3rd, Chas. LaRose.
Pullets, 2.—1st and 2nd, Richard Oke.

A. O. V. Rose Comb Bantams.

Cocks, 2.—1st, Richard Oke; 2nd, J. Mason & Son.
Hens, 2.—1st, Richard Oke; 2nd, J. Mason & Son.
Cockerels, 3.—1st and 2nd, Richard Oke; 3rd, J. Mason & Son.
Pullets, 4.—1st and 2nd, Richard Oke; 3rd, J. Mason & Son.

Buff Cochin Bantams.

Cocks, 3.—1st and 2nd, A. C. Despres; 3rd, E. S. Baker.
Hens, 4.—1st and 3rd, J. A. Parker; 2nd, A. C. Despres.
Cockerels, 3.—1st, J. A. Parker; 2nd, W. Plant; 3rd, A. C. Despres.
Pullets, 3.—1st, A. C. Despres; 2nd, W. Plant; 3rd, J. A. Parker.

Black Cochin Bantams.

Cocks, 8.—1st, E. S. Baker; 2nd, J. B. A. Roy; 3rd, Jas. Snetsinger.
Hens, 10.—1st, Jas. Baptie; 2nd, E. S. Baker; 3rd, Deverell Bros.
Cockerels, 10.—1st and 2nd, J. B. A. Roy; 3rd, L. Cabana.
Pullets, 9.—1st, 2nd and 3rd, J. B. A. Roy.

Light Brahma Bantams.

Cocks, 3.—1st and 2nd, Shaw & McIntosh; 3rd, L. Cabana.
Hens, 3.—1st and 2nd, Shaw & McIntosh; 3rd, L. Cabana.
Cockerels, 3.—1st and 2nd, Shaw & McIntosh; 3rd, L. Cabana.
Pullets, 5.—1st and 2nd, Shaw & McIntosh; 3rd, L. Cabana.

Japanese Black-Tailed Bantams.

Cocks, 1.—1st, Richard Oke.
Hens, 3.—1st and 2nd, Richard Oke; 3rd, G. A. McInnes.
Cockerels, 2.—1st, Richard Oke; 2nd, G. A. McInnes.
Pullets, 3.—1st and 2nd, Richard Oke; 3rd, G. A. McInnes.

A. O. V. Japanese Bantams.

Hens, 3.—1st and 2nd, Richard Oke; 3rd, G. A. McInnes.
Cockerels, 1.—1st, G. A. McInnes.
Pullets, 2.—1st and 2nd, G. A. McInnes.

A. O. S. V. Bantams.

Cocks, 1.—1st, Richard Oke.
Hens, 2.—1st, Richard Oke; 2nd, J. H. Warrington.
Cockerels, 3.—1st, Richard Oke; 2nd, J. H. Warrington.
Pullets, 2.—1st, Richard Oke.

Bronze Turkeys.

Male, old, 5.—1st, T. J. Cole; 2nd and 3rd, Jas. Snetsinger.
Female, old, 5.—1st and 2nd, Jas. Snetsinger; 3rd, Geo. R. Bradley.
Male, young, 9.—1st and 3rd, Jas. Snetsinger; 2nd, T. J. Cole.
Female, young, 7.—1st, D. Cumming; 2nd and 3rd, Jas. Snetsinger.

White Turkeys.

Male, old 3.—1st, E. S. Baker; 2nd, Geo. Baker; 3rd, T. J. Cole.
Female, old 5.—1st and 2nd, E. S. Baker; 3rd, Geo. Baker.
Male, young, 6.—1st, E. S. Baker; 2nd, D. Cumming; 3rd, T. J. Cole.
Female, young, 7.—1st and 2nd E. S. Baker; 3rd, D. Cumming.

Toulouse Geese.

Male, old, 3.—1st, E. S. Baker; 2nd, T. J. Cole; 3rd, N. G. Moodie.
Female, old, 3.—1st, T. J. Cole; 2nd, E. S. Baker; 3rd, N. G. Moodie.
Male, young, 5.—1st and 2nd, E. S. Baker; 3rd, T. J. Cole.
Female, young, 5.—1st and 2nd, E. S. Baker; 3rd, T. J. Cole.

EMBDEN GEESE.

Male, old, 4.—1st, T. J. Cole; 2nd, E. S. Baker; 3rd, P. A. McIntosh, M.D.
Female, old, 4.—1st, E. S. Baker; 2nd, T. J. Cole; 3rd, P. A. McIntosh, M.D.
Male, young, 3.—1st, T. J. Cole; 2nd, E. S. Baker; 3rd, D. Cumming.
Female, young 3.—1st, E. S. Baker; 2nd, T. J. Cole; 3rd, D. Cumming.

CHINESE GEESE.

Male, old, 1.—1st, T. J. Cole.
Female, old, 1.—1st, T. J. Cole.
Male, young, 2.—1st, T. J. Cole; 2nd, P. A. McIntosh, M.D.
Female, young, 2.—1st, T. J. Cole; 2nd, P. A. McIntosh, M.D.

A. O. V. GEESE.

Male, old, 3.—1st, E. S. Baker; 2nd, T. J. Cole; 3rd, P. A. McIntosh, M.D.
Female, old, 3.—1st, T. J. Cole; 2nd, E. S. Baker; 3rd, P. A. McIntosh, M.D.
Male, young, 3.—1st, E. S. Baker; 2nd, T. J. Cole; 3rd, Jas. Snetsinger.
Female, young, 3.—1st, E. S. Baker; 2nd, Jas. Snetsinger; 3rd, T. J. Cole.

ROUEN DUCKS.

Male, old, 3.—1st and 2nd, E. S. Baker; 3rd, T. J. Cole.
Female, old, 3.—1st and 2nd, E. S. Baker; 3rd, T. J. Cole.
Male, young, 3.—1st and 2nd, E. S. Baker; 3rd, T. J. Cole.
Female, young, 3.—1st and 2nd, E. S. Baker; 3rd, T. J. Cole.

PEKIN DUCKS.

Male, old, 5.—1st, E. S. Baker; 2nd, Jas. Snetsinger; 3rd, T. J. Cole.
Female, old, 5.—1st, Jas. Snetsinger; 2nd, E. S. Baker; 3rd, T. J. Cole.
Male, young, 4.—1st, Jas. Snetsinger; 2nd, T. J. Cole; 3rd, E. S. Baker.
Female, young, 4.—1st, Jas. Snetsinger; 2nd, E. S. Baker; 3rd, T. J. Cole.

AYLESBURY DUCKS.

Male, old, 1.—1st, T. J. Cole.
Female, old, 2.—1st, T. J. Cole.
Male, young, 2.—1st, T. J. Cole.
Female, young, 2.—1st, T. J. Cole.

CAYUGA DUCKS.

Male, old, 3.—1st and 2nd, E. S. Baker; 3rd, Jas. Snetsinger.
Female, old, 3.—1st and 2nd, E. S. Baker; 3rd, Jas. Snetsinger.
Male, young, 2.—1st and 2nd, E. S. Baker.
Female, young, 3.—1st and 3rd, E. S. Baker; 2nd, Jas. Snetsinger.

INDIAN RUNNER DUCKS.

Male, old, 1.—1st, T. J. Cole.
Female, old, 1.—1st, T. J. Cole.
Male, young, 1.—1st, T. J. Cole.
Female, young, 1.—1st, T. J. Cole.

A. O. V. DUCKS.

Male, old, 2.—1st, P. A. McIntosh, M.D.; 2nd, McDougall & Bedlow.
Female, old, 2.—1st, McDougall & Bedlow; 2nd, P. A. McIntosh, M.D.
Male, young, 1.—1st, P. A. McIntosh, M.D.
Female, young, 1.—1st, P. A. McIntosh, M.D.

CARRIERS.

Hens, 1.—1st, W. H. Reid.

WHITE POUTERS.

Cocks, 3.—1st and 2nd, W. H. Reid.
Hens, 3.—1st and 2nd, W. H. Reid.

A. O. C. Pouters.

Cocks, 4.—1st, W. Plant; 2nd, W. H. Reid.
Hens, 5.—1st, Hiawatha Pigeon Lofts; 2nd, W. Plant.

Pigmy Pouter.

Cocks, 5.—1st, J. S. Greenshields; 2nd, W. H. Reid.
Hens, 5.—1st, J. S. Greenshield; 2nd, W. H. Reid.

L. F. Muffed Tumblers.

Cocks, 9.—1st, A. C. Despres; 2nd, Dr. Pingel & Son.
Hens, 8.—1st, A. C. Despres; 2nd, Geo. Beeson.

L. F. Clean Leg Tumblers

Cocks, 7.—1st, Dr. Pingel & Son; 2nd, C. E. Salmon.
Hens, 7.—1st and 2nd, Dr. Pingel & Son.

S. F. Tumblers.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

Trumpeter.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

Jacobins, R. or Y.

Cocks, 4.—1st and 2nd, J. S. Greenshields.
Hens, 4.—1st, J. S. Greenshields; 2nd, W. H. Reid.

White Jacobins.

Cocks, 4.—1st and 2nd, W. H. Reid.
Hens, 3.—1st, Hiawatha Pigeon Lofts; 2nd, W. H. Reid.

A. O. S. C. Jacobins.

Cocks, 4.—1st and 2nd, W. H. Reid.
Hens, 4.—1st and 2nd, J. S. Greenshields.

R. C. Antwerps.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

Silver Dun Antwerps.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

White Fantails.

Cocks, 3.—1st and 2nd, J. S. Greenshields.
Hens, 3.—1st and 2nd, J. S. Greenshields.

Blue Fantails.

Cocks, 3.—1st, W. Plant; 2nd, J. S. Greenshields.
Hens, 3.—1st and 2nd, J. S. Greenshields.

A. O. S. C. Fantails.

Cocks, 2.—1st and 2nd, J. S. Greenshields.
Hens, 2.—1st and 2nd, J. S. Greenshields.

BLACK MAGPIES.

Cocks, 7.—1st and 2nd, A. E. Bourguignon.
Hens, 7.—1st, J. S. Greenshields; 2nd, A. E. Bourguignon.

RED MAGPIES.

Cocks, 7.—1st and 2nd, A. E. Bourguignon.
Hens, 7.—1st and 2nd, A. E. Bourguignon.

A. O. C. MAGPIES.

Cocks, 5.—1st, J. S. Greenshields; 2nd, A. E. Bourgulgnon.
Hens, 6.—1st, J. S. Greenshields, 2nd, A. E. Bourguignon.

SHOW HOMERS.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

BLUE CHEQUERED SHOW HOMERS.

Cocks, 5.—1st, Arthur Carriere; 2nd, Jno. I. Gill.
Hens, 5.—1st, Arthur Carriere; 2nd Arthur Bureau.

BLUE FLYING HOMERS.

Cocks, 5.—1st, Jno. I. Gill; 2nd, R. E. Blakely.
Hens, 4.—1st, Arthur Carriere; 2nd, Hiawatha Pigeon Lofts.

A. O. C. FLYING HOMERS.

Cocks, 10.—1st and 2nd, Jno. I. Gill.
Hens, 8.—1st and 2nd, Jno. I. Gill.

BLACK SWALLOWS.

Cocks, 4.—1st, Phil Beauchamp; 2nd, W. H. Reld.
Hens, 4.—1st, Phil Beauchamp; 2nd, W. H. Reid.

A. O. S. C. SWALLOWS.

Cocks, 3.—1st, Phil Beauchamp; 2nd, W. H. Reld.
Hens, 2.—1st, W. H. Reid; 2nd, Phil Beauchamp.

A. O. C. SWALLOWS.

Cocks, 4.—1st, Dr. Pingel & Son; 2nd, W. Plant.
Hens, 3.—1st, W. Plant; 2nd, J. H. Nolet.

DRAGOONS.

Cocks, 2.—1st and 2nd, Hiawatha Pigeon Lofts.

ARCHANGELS.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

BLACK NUN.

Cocks, 1.—1st, Hiawatha Pigeon Lofts.
Hens, 1.—1st, Hiawatha Pigeon Lofts.

WHITE AFRICAN OWLS.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 1.—1st, W. H. Reid.

A. O. C. African Owls.

Cocks, 3.—1st and 2nd, W. H. Reid.
Hens, 3.—1st and 2nd, W. H. Reid.

English Owls, Any Variety.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

A. O. V. Owls.

Cocks, 3.—1st, W. H. Reid; 2nd, Hiawatha Pigeon Lofts.
Hens, 2.—1st and 2nd, W. H. Reid.

Black Turbits.

Cocks, 2.—1st and 2nd, J. S. Greenshields.
Hens, 2.—1st and 2nd, J. S. Greenshields.

Blue Turbits.

Cocks, 3.—1st and 2nd, J. S. Greenshields.
Hens, 3.—1st and 2nd, J. S. Greenshields.

A. O. C. Turbits.

Cocks, 2.—1st and 2nd, J. S. Greenshields.
Hens, 2.—1st and 2nd, J. S. Greenshields.

A. O. S. Variety Pigeons.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

Pair Doves.

Pair, 1.—1st, Phil Beauchamp.

Pair Pea Fowl.

Pair, 1.—1st, Jas. Snetsinger,

Pair Cavies.

Pair, 4.—1st and 2nd, M. C. Odell.

Pheasants.

Pair, 1.—1st, W .H. Reid.

Belgian Hares Over 6 Months.

Males. 1.—1st, H. D. Dempsey.
Females, 2.—1st, H. D. Dempsey; 2nd, W. J. Craig.

Rabbits.

Males, 2.—1st and 2nd, D. B. Alexander, M.D.,
Females, 2.—1st and 2nd, D. B. Alexander, M.D.

Pair Javas, Langshans, or Rhode Island Reds, of 1910, Any Variety.

Pairs, 7.—1st and 2nd, A. A. Armstrong; 3rd, Alex. Dynes.

Pair Plymouth Rocks of 1910, Any Variety.

Pairs, 10.—1st and 2nd, A. A. Armstrong; 3rd, J. A. & M. Benson.

PAIR WYANDOTTES OF 1910, ANY VARIETY.

Pairs, 10.—1st, T. G. Slinn; 2nd and 3rd, A. A. Armstrong; 4th, R. H. Grant.

PAIR MINORCAS, ANDALUSIANS OR LEGHORNS OF 1910, ANY VARIETY.

Pairs, 6.—1st, 3rd and 4th, A. A. Armstrong; 2nd, Sarah Crouch.

PAIR DORKINGS OF 1910, ANY VARIETY.

Pairs, 5.—1st, 2nd and 3rd, A. A. Armstrong; 4th, D. Cumming.

PAIR ORPINGTONS OF 1910, ANY VARIETY.

Pairs, 11.—1st, A. A. Armstrong, 2nd and 3rd, W. H. Slinn.

PAIR GAMES OF 1910, ANY VARIETY.

Pairs, 4.—1st, Chas. La Rose; 2nd and 3rd, W. Barber; 4th, W. H. Slinn.

PAIR FRENCH OF 1910, ANY VARIETY.

Pair, 1.—1st, R. & J. Tomalin.

CASE OF FATTED COCKERELS.

Cocks, 10.—1st, D. Muirhead; 2nd, 3rd and 4th, A. A. Armstrong.

TURKEY, ANY AGE, MALE.

Males 4.—1st and 4th, R. & J. Tomalin; 2nd, A. A. Armstrong; 3rd, Jas. Snetsinger.

TURKEY, ANY AGE, FEMALE.

Females, 6.—1st, R. H. Grant; 2nd, Geo. R. Bradley; 3rd and 4th, R. & J. Tomalin.

TURKEY, 1910, MALE.

Males, 6.—1st and 3rd, R. & J. Tomalin; 2nd, Jas. Snetsinger; 4th, A. A. Armstrong.

TURKEY, 1910, FEMALE.

Females, 7.—1st and 3rd, R. & J. Tomalin; 2nd, Jas. Snetsinger; 4th, Geo. R. Bradley.

GEESE, 1910, WHITE.

Entries, 4.—1st and 2nd, Geo. R. Bradley; 3rd and 4th, R. & J. Tomalin.

GEESE, 1910, COLORED.

Entries, 7.—1st and 4th, A. A. Armstrong; 2nd and 3rd, R. H. Grant.

PAIR DUCKS, 1910, WHITE.

Pair, 6.—1st, 2nd and 3rd, R. H. Grant, 4th, D. Cumming.

PAIR DUCKS, 1910, COLORED.

Pairs, 5.—1st, Jas. Snetsinger; 2nd and 3rd, R. & J. Tomalin. 4th, R. H. Grant.

COLORED EGGS, DOZEN.

Dozens, 5.—1st, J. Mason & Son; 2nd, R. & J. Tomalin; 3rd, J. R. Thomson; 4th, D. Cumming.

WHITE EGGS, DOZEN.

Dozens, 2.—1st, Wm. Dickson; 2nd, R. & J. Tomalin,

PAIR SQUABS.

Pairs, 3.—1st and 2nd, R. & J. Tomalin.

SELLING CLASS.

DORKINGS.

Males, 4.—1st, D. Cumming; 2nd, McDougall & Bedlow; 3rd, Sarah Crouch.
Females, 7.—1st, Jas. Snetsinger; 2nd, J. H. Warrington; 3rd, Sarah Crouch.

BRAHMAS.

Male, 1.—1st, Jas. Snetsinger.
Female, 1.—1st, Jas. Snetsinger.

PLYMOUTH ROCK.

Males 66.—1st, S. E. Alexander; 2nd and 3rd, F. A. James.
Females, 8.—1st, M. R. Hoover; 2nd, F. A. James; 3rd, Geo. Robertson.

WYANDOTTES.

Males, 16.—1st, J. A. & M. Benson; 2nd, Hintonburg Poultry Yards; 3rd, Jno. Grant; 4th, D. Cumming.
Females, 6.—1st and 2nd, G. Lake; 3rd, Jas. Baptie.

RHODE ISLAND REDS.

Males, 3.—1st and 3rd, Jno. A. Grimes; 2nd, Wm. Dickson.

ORPINGTONS.

Males, 10.—1st, Hamilton & Scoyne; 2nd, Jas. Snetsinger; 3rd, A. W. E. Hellyer.

Females, 5.—1st, Jas. Snetsinger; 2nd, Harry T. Lush; 3rd, W. H. Slinn.

MINORCAS.

Males, 9.—1st, E. R. Frith; 2nd, Wm. Dickson; 3rd, L. V. Zavitz.
Females, 6.—1st, L. V. Zavitz; 2nd, Jno. Grant; 3rd, Wm. Ellis.

LEGHORNS.

Males, 10.—1st and 2nd, Donald McKellar; 3rd, Sarah Crouch.
Females, 1.—1st, F. D. Marsh.

FRENCH.

Males, 1.—1st, McDougall & Bedlow.
Females, 1.—1st, McDougall & Bedlow.

A. O. V. FOWLS.

Males, 4.—1st, F. Wales; 2nd, Jas. Baptie; 3rd, J. H. Warrington.
Females, 4.—1st, F. Wales; 2nd, Jas. Baptie; 3rd, Jas. Snetsinger.

DUCKS.

Males, 2.—1st, Jas. Snetsinger; 2nd, D. Cumming.
Females, 2.—1st, D. Cumming; 2nd, Jas. Snetsinger.

POULTRY SPECIALS.

Light Brahmas.—Best cock, F. H. Sauve; best collection, F. H. Sauve.
Dark Brahmas.—Best young pair, C. H. Wilson; best collection, C. H. Wilson.
Brahmas.—Best collection, any variety, F. H. Sauve; best collection of light or dark, F. H. Sauve.
Buff Cochins.—Best collection, T. J. Cole.
Partridge Cochins.—Best hen, F. Wales.

White Cochins.—Best cock, W. D. Halliday.

Cochins, other than Buff.—Best collection, W. D. Halliday.

Cochins.—Best collection, W. D. Halliday.

Langshans.—Best cock, T. J. Cole; best collection, T. J. Cole.

Asiatics.—Best collection, any variety, other than Brahmas, W. D. Halliday.

Barred Plymouth Rocks.—Best cock, J. A. Lambertus; best hen, Chas. La Rose; best cockerel, John Gormley; best three cockerels, John Gormley; best colored pullet, F. A. James; best collection, J. A. Lambertus.

White Plymouth Rocks.—Best male, M. A. Lathey; best female, Geo. Robertson; best cock and hen, Geo. Robertson; best 3 hens, Geo. Robertson; best cockerel and pullet, M. A. Lathey; best collection, M. A. Lathey.

Buff Plymouth Rocks.—Best pullet, McCaffrey Bros.; best young pair, McCaffrey Bros.; best collection, McCaffrey Bros.

Golden Wyandottes.—Best cock, Robert Paterson; best cock and hen, Robert Patterson; best male, Robert Patterson; best female, Jas. Baptie; best pullet, Jas. Baptie; best collection, Robert Patterson.

Silver Wyandottes.—Best male, best female, best hen, best cockerel and pullet, best collection, Hintonburg Poultry Yards, Ottawa.

Buff Wyandottes.—Best cock, best male, best hen, best female, best cock and hen, best cockerel, best pullet, best collection, J. Mason & Son, Ottawa.

White Wyandottes.—Best cock, Hintonburg Poultry Yards; best hen, Hintonburg Poultry Yards; best cockerel, Geo. Higman, Sr.; best pullet, Hintonburg Poultry Yards; best collection, Hintonburg Poultry Yards.

Partridge Wyandottes.—Best cock, Geo. Higman, Jr.; best hen, Adams Bros.; best cock and hen, Geo. Higman, Jr.; best cockerel, dams Bros.; best pullet, Adams Bros.; best cock, hen, cockerel and pullet, Adams Bros.; best collection, Adams Bros.

Columbian Wyandottes.—Best male, G. F. Wadsworth; best collection, G. F. Wadsworth.

Black Wyandottes.—Best cock, P. A. McIntosh; best collection, Hintonburg Poultry Yards.

A. O. V. Wyandottes.—Best collection, R. Patterson; best collection of other than white or Buff, Hintonburg Poultry Yards.

Javas.—Best collection, T. J. Cole.

R. C. Rhode Island Reds.—Best cock, C. Vogt; best pullet, C. Vogt; best young pair, C. Vogt; best collection, C. Vogt.

S. C. Rhode Island Reds.—Best cock, Gunn, Langlois & Co.; best collection, Gunn Langlois & Co.

Rhode Island Reds.—Best bird, Gunn, Langlois & Co.; best collection, C. Vogt; best cock, hen, cockerel and pullet, C. Vogt.

Games.—Best collection, B. B. Red, W. Barber; best collection, Brown Red, W. Barber; best collection, Duckwing, W. Barber; best collection, Pyle, P. A. McIntosh; best C. Indian (laced), male, Chas. La Rose; best collection, C. Indian (laced), Chas. La Rose; best collection, A. O. S. V. or W. Indian, W. Barber; best collection, any one variety, W. Barber; best Old English or Pit cock, Jas. Snetsinger; best collection, Old English or Pit, Jas. Snetsinger.

S. C. White Leghorns.—Best cock, D. McKellar; best hen, D. McKellar; best cock and hen, D. McKellar; best cockerel, G. Lake; best three cockerels, D. McKellar; best pullet, F. Wales; best cockerel and pullet, D. McKellar; best cock, hen, cockerel and pullet, D. McKellar; best collection, D. McKellar.

S. C. Brown Leghorns.—Best male, Jas. A. Elgie; best female, J. B. A. Roy; best pullet, Collins & Cornish; best three pullets, Jas. A. Elgie; best cock, hen, cockerel and pullet, Jas. A. Elgie; best collection, Collins & Cornish.

S. C. Back Leghorns.—Best cock, John A. Belford; best male, John A. Belford; best female, Wm. Osborne; best cockerel, John A. Belford; best 3 cockerels, John A. Belford; best cockerel and pullet, John A. Belford; best cock, hen, cockerel and pullet, Wm. Osborne; best collection, John A. Belford.

S. C. Buff Leghorns.—Best male, D. B. Alexander; best female, D. B. Alexander; best collection, D. B. Alexander.

Silver Duckwing Leghorns.—Best cock, M. R. Milroy; second best cock, M. R. Milroy; best hen, M. R. Milroy; second best hen, M. R. Milroy; best collection, M. R. Milroy.

R. C. Brown Leghorns.—Best pullet, C. H. Wilson; best collection, C. H. Wilson.

A. O. S. V. R. C. Leghorns.—Best male, Jas. Snetsinger; best female, Jas. Snetsinger; best collection, Jas. Snetsinger.

Leghorns, except S. C. White.—Best cock, hen, cockerel and pullet, C. H. Wilson.

Spanish.—Best cock, Jas. Snetsinger; best collection, Jas. Snetsinger.

Anconas.—Best cockerel, A. C. McCulloch; best collection, A. C. McCulloch.

Andalusians.—Best male, E. S. Baker; best female, Chas. La Rose; best collection, E. S. Baker.

Black Minorcas.—Best cock, Wm. Ellis; best hen, Hintonburg Poultry Yards; best cockerel, L. V. Zavitz; best pullet, L. V. Zavitz; best collection, L. V. Zavitz.

White Orpingtons.—Best male, Hintonburg Poultry Yards; best female, Jas. Snetsinger; best cockerel and pullet, S. K. Burdin; best collection, Jas. Snetsinger.

S. C. Black Orpingtons.—Best collection, Hamilton & Scoyne.

A. O. V. Orpingtons.—Best male, Hamilton & Scoyne; best female, John Baum; best collection, Hamilton & Scoyne.

Orpingtons, except Buff.—Best cock, hen, cockerel and pullet, Hamilton & Scoyne; best collection, Hamilton & Scoyne.

Silver Grey Dorkings.—Best male, Jas. Snetsinger.

Colored Dorkings.—Best collection, J. H. Warrington.

White Dorkings.—Best collection, J. H. Warrington.

Houdans.—Best cock and hen, P. A. McIntosh; best collection, P. A. McIntosh.

Hamburgs.—Best collection black, R. Oke; best collection G. P., R. Oke; best 3 S. P. cockerels, R. Oke; best collection G. S., Jas. Baptie; best 3 S. S. cockerels, Harry T. Lush; best collection S. S., R. Oke; best collection any one variety, R. Oke.

Red Caps.—Best collection, P. A. McIntosh.

Polands.—Best collection W. C. B., Wm. McNeil; best collection Golden, Wm. McNeil; best collection Silver, Wm. McNeil; best collection Polish, Wm. McNeil; best collection any one variety, Wm. McNeil.

Game Bantams.—Best pair A. O. V., Rook Bros.; best collection, Rook Bros.; second best collection, W. Barber; best collection, any one variety, W. Barber.

Bantams.—Best collection Rose Comb, R. Oke; best collection Cochins, any one variety, J. B. A. Roy; best collection Light Brahmas, Shaw & McIntosh; best collection Japanese, R. Oke; best Old English Spangled male, J. Mason & Son; best collection A. O. S. V., R. Oke.

Bantams, other than game.—Best cock, hen, cockerel and pullet, R. Oke.

Turkeys.—Best collection Bronze, Jas. Snetsinger; best collection, other than Bronze, Baker Bros.; best collection, any one variety, Jas. Snetsinger.

Geese.—Best collection, any one variety, Baker Bros.

Ducks.—Best collection Rouen, Baker Bros.; best collection Pekin, Jas. Snetsinger; Best collection Cayuga, Baker Bros.; best collection, other than Rouen, Pekin or Cayuga, T. J. Cole; best four ducks in Show, Baker Bros.

Pigeons.—Best Blue Dragon, Hiawatha Pigeon Lofts; best Black Magpie hen, J. S. Greenshields; best Black Magpie, J. S. Greenshields; best Red Magpie, A. E. Bourguignon; best Red Magpie, hen, A. E. Bourguignon; best Yellow Magpie, J. S. Greenshields; best Magpie in the Show, J. S. Greenshields; best collection Magpies, A. E. Bourguignon; best self-colored clean leg Tumbler, W. H. Reid; Blue or Silver Muffed Tumbler, D. Pingel & Son; best collection Trumpeters, W. H. Reid; best collection Flying Homers, John I. Gill; best Red Pied Pouter, W. Plaunt; best pair Pigmy Pouters, J. S. Greenshields; best Pouter, W. Plaunt; best pair Blue-winged Turbits, J. S. Greenshields; best collection Turbits, J. S. Greenshields.

Pheasants.—Best collection, W. H. Reid.

Dressed Poultry.—Best 24 crate fed chickens, A. A. Armstrong; best 12 dozen eggs, Jas. Snetsinger; best three pair cockerels in any one section of fowls, A. A. Armstrong; best and best dressed pair, A. A. Armstrong.

Utility Fowl.—Best cock, hen, cockerel and pullet, R. McCurdy; best pair chicks, M. A. Lathey.

Best Bird in Show, pigeons, bantams, turkeys, geese and ducks not competing.—Donald McKellar.

Largest and best collection of any one variety in the Show, excepting Bantams.—J. Mason & Son.

Largest and best collection of any one variety of Bantams.—

Best shaped bird in the American Class.—George Robertson.

Best shaped bird in the Mediterranean Class.—Donald McKellar.

Best shaped bird in the English Class.—Hamilton & Scoyne.

Best shaped bird in the A. O. V. Large Fowl Class.—R. Oke.

Best shaped bird in the Bantam Class.—W. Barber.

LIST OF MEMBERS.

ONTARIO HORSE BREEDERS' ASSOCIATION FOR 1911.

Through the Canadian Shire Horse Association.

Bennett, Jas. W., Lake View.
Boyd, Co., Mossom, Bobcaygeon.
Breckon, Jno., Appleby.
Cornell, Geo. T., Lyn.
Elliott, T. D., Bolton.
Ferguson, R. D., Port Stanley.
Fletcher, Jos., Oxford Mills.
Gardhouse, C. S., Humber.
Gardhouse & Sons, Highfield.
Gardhouse, J. M., Weston.
Geary, C. K., St. Thomas.
Laking, Wm., Haliburton.
Mawhinney, Jno., Marsville.
Miller, Andrew A., Middlemarch.
Morris & Wellington, Fonthill.
McPhail, Hugh, Iona Station.
Pearson, Wm., & Son, Hamilton.
Porter Bros., Appleby.
Sexsmith, M. W., Ridgeway.
Yark, Darius R., Belhaven.
Galbraith Bros., Orangeville.

Through the Canadian Hackney Horse Society.

Allison, J. W., Morrisburg.
Blacker, Wm., Brantford.
Boag, John A., & Son, Queensville.
Brooks, E. W., Stirling.
Butler, W. E., Ingersoll.
Dawson, Adam, Cannington.
Graham Bros., Claremont.
Graham, Renfrew Co., Ltd., Bedford Park.
Gurney, G. W., & Sons, Paris.
Hassard, T. H., Markham.
Hodgkinson & Tisdale, Beaverton.
Beith, Hon. Robt., Bowmanville.
Jewell, W. E., Bowmanville.
Mossom, Boyd Co., Ltd., Bobcaygeon.
Mercer, Thos., Markdale.
Mitchell, Geo., Clarke.
McCallum & Bro., W. J., Brampton.
McKay, Wm. C., Oakville.
McPherson, Dr. J. G., Toronto.
Murchison, Jno. R., Orillia.
Oak Park Stock Farm, Brantford.
Pepper, Geo., Toronto.
Sorby, O., Guelph.
Smith, Jos. F., Ancaster.
Thompson, J. R., Guelph.
Yeager, A., Simcoe.

Through the Canadian Thoroughbred Horse Society.

Cook, G. W., Morrisburg.
Davies, Robert, Toronto.
Dickson, J. C., Hamilton.
Dyment, John, Barrie.
Hamilton Jockey Club, Hamilton.
Hendrie, George M., Hamilton.
Hendrie, Wm., Hamilton.
Livingstone, Mrs. Lily A., Cobourg.
Lowes, Wm., Drayton.
McCrae, Lt.-Col. D., Guelph
Morrison, G. A., 1142 College St., Toronto.
Seagram, Jos. E., Waterloo.
Walker, Wm., Toronto.
Webster, Dr. R. E., Ottawa.

Through the Canadian Standard Bred Society.

Allison, J. W. Morrisburg.
Ashley Stock Farm, Foxboro.
Clemons, Percy F., St. George.
Davies, Robert, Toronto.
Mabee, Chas. H., Tillsonburg.
Hammall, Wm., 51 Indian Road, Toronto.
Mara, E. N., Parkhill.

Through the Canadian Pony Society.

Brodie, G. A., Bethesda.
Cartmel, John, Brantford.
Cox, T. A., Brantford.
Gardhouse, J. M., Weston.
Graham, Renfrew Co., Limited, Bedford Park.
Harkness, W. K., Brampton.
Keeler, Edwin, Maitland.
Mead, W. R., Kingston Road, Toronto.
Miller, Robert, Stouffville.
Miller, John, Jr., Ashburn.
Mulock, Sir Wm., Armitage.
McCullough, P., Markdale.
Robinson, H. M., Toronto.

Through the Clydesdale Horse Association.

Agar, Amos, Nashville.
Airth, W. S., North Bruce.
Aitchison, John, Stratford.
Alderson, William, Kintore.
Allan & Vancleave, Renfrew.
Allcock, D. E., Ravenna.
Alsop, Joseph, Glasgow.
Alton, A. P., Appleby.
Alton & Sons, A. P., Appleby.
Anderson, Duncan, Wingham.
Anderson, John Omemee.
Annett, W. B., Walnut.

Annis, G. F., Courtice.
Arbogast, John, Sebringville.
Arbogast, Peter, Sebringville.
Armstrong, John, Motherwell.
Armstrong, John F., Danforth.
Armstrong, L. H., Hagerman.
Armstrong, Robert, Strongville.
Armstrong, T. H., Kinburn.
Armstrong, Wm., Locust Hill.
Ashford, James, Ryckman's Corners.
Attridge, G. A., Clachan.
Baker, Allan, Greensville.
Baker, Thomas & Son, Solina.
Baker, A. M., Ringwood.
Baker, Ira, Cainsville.
Baldwin, Charles, Hillsburg.
Balsdon, John I., Markham.
Barnard, H. G., South Monaghan.
Barnes, W. G., Green River.
Barnett, Joseph W., Brooklin.
Barrett, A. W., Park Hill.
Barton & Sons, J. T., Beeton.
Baston, Walter, Goodwood.
Batty, F. W., Brooklin.
Bean & Sons, Chas., Brinsley.
Beare, J. S., Cedar Grove.
Beattie, J. J., Mt. Brydges.
Beattie, Patten, Melbourne.
Beattie, W. R., Ennotville.
Begg, W. A., Tiverton.
Beharrell, B. V., Frome.
Beith, Hon. Robert, Bowmanville.
Bell, D. D., Shakespeare.
Bell, Jno. M., Hensall.
Bell & Sons, Geo. A., Lowville.
Bell, Wm., St. Paul's Station.
Bennett, Adelbert, Edenvale.
Benson, Jno., Rosemount.
Benson, Wm., Jr., Bewdley.
Berry, Robert, Berryland.
Berry, T. J., Hensall.
Black, John, Keady.
Black, John, Kilsyth.
Black, Wm., Seaforth.
Blackburn, Enos., Leaskdale.
Boag, A. W., Sutton, West.
Boag, H. G., Barrie.
Boag, John A., & Son, Queensville.
Bolton, Angus, Coventry.
Borland, J. G., Claremont.
Botham, George, Bradford.
Boucock, A., Lansing.
Bowes, Jas., Concord.
Bowes, T. A., Concord.
Bowman, James, Guelph.
Boyd, Geo. M, Owen Sound.
Boyes, John, Jr., Churchill.
Boyle Bros., Kinlough.
Bradley, F. W., Enfield.
Brandon Bros., Forest.
Brent, William, Raglan.
Bright, John, Myrtle Station.
Brock, Wm., Winchelsea.
Brodie, G. A., Bethesda.
Brown, John, Galt.
Brownlee, W. H., Aughrim.
Bruce, Jas., Egbert.
Brumwell, Isaac, Victoria Square.
Buchanan, Robt. D., Wexford.
Bryer, E., Glenwillow.
Bunker, S. C., Pickering.
Burgess, Wm., & Sons, Wallaceburg.
Burgess, Wellington, Norwood.
Burkholder, Noah, Cherrywood.
Burlingham, D., Wellington.
Burr, J. F., Waubuno.
Butler, William, Durham Centre.
Butler, W. E., Ingersoll.
Calder, J. B., Carluke.
Caldwell, J. H., Fallowfield.
Cameron, Colin, Etobicoke.
Campbell Bros., Alvinston.
Campbell, J. & D. J., Woodville.
Campbell, T. A., Smith's Falls.
Cargill, H., & Son, Cargill.
Carlyle, S. G., Chesterville.
Carmichael, Hector, Layton.
Carruthers, John, Mono Road.
Carstairs, Robert, Bomanton.
Carstairs & Sons, D., Bomanton.
Chapman & Son, Matthew, Tavistock.
Charlton, E. W. & G., Duncrief.
Chehott, Anthony, Elsinore.
Christie, Peter, Manchester.
Church, W. J., Arthur.
Clark Bros., Mount Brydges.
Clerk, W. H., Mount Brydges.
Clayton, Geo., Peepabun.
Clemens, A. E., Tyrone.
Clements, Jas., Dobbinton.
Coad, Frank, Oakwood.
Coates, James, Shirley.
Coates, Leslie, Shirley.
Cochrane, Geo., Enfield.
Cochrane, Wm., 564 Gladstone Ave., Ottawa.
Cole, T. J. T., Tyrone.
Colquhoun, William, Mitchell.
Columbus, Daniel, Jarvis.
Condy, Thomas, Claremont.
Cook, James, Myrtle.
Cooper, F. M., Claremont.
Cooper, Wm., Fergus.
Cossins, Robert, Whitby.
Costello, Ed., Downeyville.
Coulson, A., O'Sullivan's Cors.
Couperthwaite, Jno., Hagerman's Cors.
Coursey Bros., Lucan.
Coursey, T. & C. H., Lucan.
Courtney, A. C., Cherrywood.
Cowan, J. W., Cannington.
Cowie, G. R., Markham.
Cowie, Jno., Markham.
Cowie, W. J., Locust Hill.
Cox, Robert, Amber.
Crake, R. H., Bradford.
Crawford, A. M., Thedford or Widder.
Crawford & Lachlan, Thedford.
Crawford, Geo., Oro Station.
Crawford Bros., Brown's Cors.
Crawford, Thos., Balsover.
Croll, James, Ramsayville.
Crosman, Jas., Taunton.
Culbert, Wesley W., Saintsbury.
Cunning, Neil T., Eberts.
Cundick, E. & B., Watford.

Dale, Geo., & Sons, Seaforth.
Dalgety Bros., London and Glencoe.
Dalrymple, Wm., Cromarty.
Davidson, James, Avonton.
Davidson, Geo., & Sons, Cherrywood.
Davidson, J. F., Wingham.
Davidson, Jno., Ashburn.
Davidson, Thos. A., Cobourg.
Davidson & Sons, Peter, Fergus.
Davies, Robert, Todmorden.
Dawson, Adam, Cannington.
DeGeer, Jno. Oakwood.
Devitt, Robert, Brougham.
Devitt, S. A., Cadmus.
Dickieson, Richard & Son, Ariss.
Dickson Bros., Atwood.
Dingman, Wm. J., Whitby.
Dinsmore, G. W., Thornbury.
Dix, Willlam A., Fergus.
Dixon Bros., Maguire.
Doherty, Alex., Wexford.
Doherty, Wm., Agincourt.
Dougherty, L. R., Sandusk.
Douglas & Sous, T., Strathroy.
Downer, Wm., & Sons, Little Britain.
Downing, H., Simcoe.
Downs, T. E. A., Oshawa.
Drewery, Geo., Landerkin.
Drover, Wm., Chiselhurst.
Dundas, R. D., Springville.
Dunlop, Chas., Rideauview.
Dyer, W. D., Columbus.
Dyment, S., Barrie.
Eadie, J. D., Vars.
Eagleson, E. A., Cold Springs.
Eaid, Chas. E., Simcoe.
Edwards, Wm., Saurin.
Edwards, W. C., & Co., Rockland.
Elliott, F. H., Coleman.
Elliott, T. D., Bolton.
Elliott, J. F., Oxford, Centre.
Elmore, Edward, Ekfrid.
Elsom, Jno. F., Brooklin.
Esdom, Jas. H., Bainsville.
Evans, James, Claremont.
Elllott, W. F., Coleman.
Falr, Geo. A., Mill Brook.
Fallow, H. S., Evelyn.
Faris, P. M., Bradford.
Farr, James, Newmarket.
Faulds, W. M., Muncey.
Ferguson, Samuel, Conn.
Flcht, Val., Oriel.
Fieghen, Wm., Ravenna.
Fierheller Bros., Mount Elgin.
Fitzgerald, C. B., Rebecca.
Flemlng, A., Brown's Cors.
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Forgie, Jno., Claremont.
Forest, Jno., Hills Green.
Forster, W. D., Markham.
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Foster Bros., Grattan.
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Fraser, W. S., Bradford.
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Fuller, Ed., Mltchell.
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Garbutt, H. C., Lakefield.
Gaughan, Patrick, Brechin.
Gerber, Jno. R., Wellesley.
Gibson, Ed., Claremont.
Gibson, Jno. T., Clyde.
Gilbertson, Jno., Hagersville.
Giles, Jno., Christina.
Giles, Wm. H., Paisley.
Gillman, Jno. L., Brougham.
Gleason, Jas. J., Markham.
Good, Levi, Greenock.
Gordner, Jacob, Mitchell.
Gormley, A. G., Unionville.
Gracey, A., Fallowfield.
Graham Bros., Claremont.
Graham, J. S., Udora.
Graham, Jno., Derry, West.
Graham, Jno., Fenelon Falls.
Graham, Renfrew Co., Bedford Park.
Grant, Ernest, Dumblane.
Grant, Ryerson M., Bradford.
Gray, Jno., Atwood.
Gray, Wm., Mayfield.
Greenless, Hugh, Bowmanville.
Greig Bros., Brougham.
Gregg, Thos., Claremont.
Grigg, Chas., Allenwood.
Groat, Chas., Brooklin.
Groat, W. M., Holstein.
Grooms, W. W., Eberts.
Grundy, R., Clandeboye.
Guest, J. L., Fanshawe.
Guest, Richard L., Fanshawe.
Gundry, Jno., Vittoria.
Gunn & Son, D., Beaverton.
Hadden, Geo., & Sons, Wick.
Hahn Bros., Hawkesville.
Hales, Jas. J., Chatham.
Hall, T., Columbus.
Hall, W. L., Cedar Valley.
Hambly, W. E., Rockford.
Hamill, H. C., Box Grove.
Hamilton, Angus, Ravenshoe.
Hand, Jas., Tancred.
Hanlon, Henry, Rayside.
Hanlon, Jas., Ingersoll.
Harkness, W. K., Brampton.
Harlock, Joseph, Whitby.
Harris, Leamon, Mt. Elgin.
Harvey, T. B., Charing Cross.
Harwood, A. W., Hickson.
Hassard, T. H., Markham.
Hastings Bros., Cross Hill.
Hastings, Edward, Almira.
Hay, W. J., Tara.
Heeney, F. V., Ingersoll.
Henderson, James, Belton.
Henderson, Geo., Keady.
Henders, R. J., Yelverton.
Herold, Philip, Tavistock.
Hewson, Matthew, Tullamore, Ont.
Hill, David, Staffa.
Hill, W. G., Queensville.
Hird, Anthony, Brantford.

Hislop, James, Stratford.
Hodgson, A. H., West McGillivray.
Hodgkinson & Tisdale, Beaverton.
Hogate, J. B., Weston.
Hogg, Wm., & Son, Thamesford.
Holtby, R. M., Manchester.
Holtby, W. W., Manchester.
Hooey, Jno. W., Cadmus.
Hoover, Eli, Mongolia.
Hoover, J. H., Ringwood.
Horne, J. R., Marshall Hill.
Hotson, Alex., Avonton.
Howard, W. J., & Son, Concord.
Howe, Wm., North Bruce.
Howitt, James, Altona.
Hulse, Henry, Newmarket.
Hummason, Fred, Embro.
Hunter, J. C., Danforth.
Innes, Alex., Brooksdale.
Innes, Donald, Brooksdale.
Innes, Jas. W., Woodstock.
Innes & Schaefer, Woodstock.
Jackson, Geo. & Son, Downview.
Jackson, Richard, Alma.
Jackson, S. W., Oxford, Centre.
Jamieson, A., Streetsville.
Jamieson, G. G., Ennotville.
Jardine, Geo., Bond Head.
Jewell, W. E., Bowmanville.
Johnston Bros., Otterville.
Johnston, H. W., Powle's Cors.
Johnston. Jas., Otterville.
Johnston, J. R., Springford.
Johnston, J. S., Ravenshoe.
Johnston, Samuel, Trent Bridge.
Jones, Hugh, Thorndale.
Kay, Samuel, Riverbank.
Kennedy, Wm., Nobleton.
Kent, A. L., Oakville.
Kernick, Wm., Hay.
Kerr & Davidson, Balsam.
Kersey, Wm., Castlemore.
Kinnell, R. R., Dromore.
Kneeshaw, J., Bradford.
Knister, Elmer, Ruscom Station.
Knox, Andrew, Tuscarora.
Lambkin, Elisha, Brigden.
Lamont, Archie, Roome.
Lansdell, Fred, Humber.
Larkin, J. D., Queenston.
Lavin & Richardson, Harriston.
Law, Wm., & Son, Ringwood.
Leask, Geo. A., Taunton.
Lee, Alex., Greenbank.
Lee Bros., Galt.
Leek, Geo., Headford.
Legge, T. H., Temperanceville.
Leham, A. B., Atha.
Leiper, James, Londesboro.
Leonard, James, Schomberg.
Lester, Ellery, Forest.
Ley, Geo., Don.
Linton, Wm., Claremont.
Little, Jno. A., Ilderton.
Little, J. O., Mayfield.
Lofthouse, W. P., Sandusk.
Lougheed, H. P., Heathcote.
Lowes, J. W., Bethany.
Lyle, Alex. & Sons, St. Thomas.
Lyons, Marshall, Dundas.
McAlpine, A. A., Edy's Mills.
McBrien, H. W., Kinsale.
McCague, Geo. A., Victoria Square.
McCallum, Jno., Iona Station.
McCallum, W. J. & Bro., Brampton.
McCaugherty, D. H., Streetsville.
McClure, Joseph & Sons, Alloa.
McCulloch, Donald, Enfield.
McDiarmid, Jno., Lucknow.
McDiarmid, P. A., Alvinston.
McDonald Bros., Woodstock.
McDougall, D. & A., Malton.
McDougall, Silas, Edgely.
McEachren & Son, P. R., Eldon Station.
McElheron, Neil, Chatsworth.
McEwan, Jas., Clifford.
McEwen, P., Wroxeter.
McFarlane, Jno., Dutton.
McGavin, Jno. J., Leadbury.
McGregor, Alex., Uxbridge.
McIntosh, Donald, Braemar.
McIntyre Bros., Totten.
McKee, Alex., Sandhill.
McKelgan, Colin, Strathroy.
McKenzie, John, Keward.
McKinnon, Alex., Hillsburg.
McKinnon, Neil E., Hillsburg.
McKinnon, D., & Sons, Hillsburg.
McKinnon, Peter, Park Hill.
McLachlan, Neil, Ailsa Craig.
McLean, John, Aldboro.
McLellan, R. D., Metz P.O.
McMichael, Garfield, Seafroth.
McMillan, Alex., Dutton.
McMillan, John, North Keppel.
McMillan, R. J., Seaforth.
McNabb, Mungo, Lawrence Station.
McNeight, D. H., St. Mary's.
McNiven, Alex. F., St. Thomas.
McNiven, W. A., Ryckman's Cors.
McPhee, D. A., Vankleek Hill.
McPhee, H. H., Parkhill.
McPherson, D., Balsover.
McPherson, Hugh, Embro.
McQuade, Geo. A., Omemee.
McQuillan, A., Guleph.
McRae, Dan K., Strathburn.
McRae, Geo., Bainsville.
McRae & Sons, Jas., Cherrywood.
McTaggart, Jno. A., Sonya.
McTaggart, Wm., Appin.
McTavish, Alex., Shakespeare.
McTavish, Jno., Shakespeare.
Macfarlane, J. M., Sonya.
Maclean, T. D., Ormond.
Macneil, Neil, Walkers.
Maddaford Bros., Whitby.
Major, O. A., Hurdman's Bridge.
Major Bros., Whitevale.
Malcolm, James, Markham.
Maloney, Patrick, Metropolitan.
Martin, Robert, Wexford.
Martin, Thos. H., Duncrief.
Martin, Wm. R., Lucknow.
Mason, Alfred, L'Amaroux.
Mason, A. Chas., Ellesmere.

Mason, Leslie, L'Amaroux.
Matthewson, R. W., Brooklin.
Maxwell, James, Locust Hill.
Maynard, Jno. T., Brooklin.
Meadows, Chas. E., Maplewood.
Meharey, Wm., Russell.
Mercer, Thos., Markdale.
Merriam, N., Chatsworth.
Meyer, E. M., Cashel.
Middleton, G. & W., Claremont.
Miller, Jno. J., Gowrie.
Miller, Jno., McIntyre.
Miller, Jno., Jr., Ashburn.
Miller, Robt., Stouffville.
Milne, Alex., Markham.
Milne, Jas. A., Fergus.
Milne & Sons, R., Green River.
Mitchell, Jno., and estate of James, Tormore.
Mitchell, Walter, Lindsay.
Mitchell, Robert, Ivan.
Moffatt, James, Teeswater.
Moffat, R. N., Fenelon Falls.
Moffat, Wm., Carluke.
Montague, N. C., Jarvis.
Moore, Allan, Shirley.
Moore & Son, Jno., Queensville.
Morden Bros., Ridgetown.
More, Jas., Kirkton.
W. R. More, Almonte.
Morgan, D. M., Claremont.
Morgan, S., L'Amaroux.
Morrison, Duncan, Saurin.
Morrison, Jno. D., Argyle.
Morrison, Wm., Brooklin.
Morrow, Hugh, Russell.
Morrow, W. A., Russell.
Mossip, Wm., Rannick.
Mowder, Joseph, Atha.
Muldoon, J. E., Fallowfield.
Munro Bros., Inwood.
Munro, Jno. A., Argyle.
Murdoch, Wm., Palmerston.
Murphy, Thos., Brechin.
Murray, Jno., Embro.
Murray, Wm., Avonton.
Neal, James, Woodbridge.
Ness, W. J., Dollar.
Nichol, Robert, Brussels.
Nicol, Geo., Waubuno.
Noble, Geo., White Rose.
Northgraves, Chas., Nantyre.
Norton, W. H., Brougham.
Noyes, Wm., Denfield.
Oak Park Stock Farm Co., Brantford.
Ogle, Ryerson, Blytheswood.
Oke, Wm., Enniskillen.
Oliver, Robt., Thedford.
O'Neil & Co., London.
O'Neil, Melvin, Southgate.
O'Neil, W. J., Arthur.
Ontario Agricultural College, Guelph.
Omerod, W. C., Amber.
Ormiston & Sons, Jno., Columbus.
Ormiston & Sons, Wm., Columbus.
Orr, John, Galt.
Orr, Kennedy, Fergus.
Osborne, T. C., Whitby.
Parkins, Wm., Jarvis.
Paton, James, Swinton Park.
Patterson Bros., Millbrook.
Patterson, Jas. S., Almonte.
Paul, Jno., Russell.
Peacock, J. T., Woodbridge.
Pearson & Son, Wm., 103 York St., Hamilton.
Pearson, Jno., Danforth.
Peart, Samuel, Rockwood.
Perrin, Fernando, Newcastle.
Pettit, Richard, Glen Willow.
Pettit, W. G., & Sons, Freeman.
Phoenix, Albert, Greenbank.
Pilkey, D., Balsam.
Pinkerton, D., Pinkerton.
Pinkerton, R. R., Essex.
Pogue, Robt., Lindsay.
Pollock, Wm., Seagrave.
Porter, William, Marburg.
Prouse, S. J., Ingersoll.
Prout, Geo., Cedar Brae.
Pugh, W. H., Claremont.
Purtill, James, La Salette.
Rae, Duncan, Longwood.
Rae, Walter, St. Paul's Station.
Raikes, Geo., Barrie.
Rawlings, Herbert, Ravenswood.
Redmond, S. F., Peterboro.
Reid, & Co., R., Hintonburg.
Rennie, Jas., & Son, Blackwater.
Richardson, A. H. A., Hazeldean.
Richardson, Fred, Columbus.
Richardson, R. H., South March.
Richardson, Wm. P., Columbus.
Roadhouse, Silas, Comber.
Robinson, Ed. W., Markham.
Robinson, Mrs. J. W., & Sons, St. Mary's
Robinson, Wm., Markham.
Roe, R. A., Hawkestone.
Ross, Angus, Beaverton.
Ross Bros., Nairn.
Rossiter, A., Crampton.
Rothwell, Benj., Ottawa.
Rusnell, Francis, Cedarville.
Russell, J. & W., Richmond Hill.
Rutherford, Dixon, Campbell's Cross.
Scharf, Adam, Cumming's Bridge.
Schrenk, Robt., Milverton.
Scott, R. J., Brussells.
Scott, T., & Son, Sutton, West.
Scott, Robt. J., Brussels.
Scott, Wm. G., Claremont.
Selby, N. T., Newcastle.
Semple, Hugh, Hereward.
Semple, John, Milverton.
Semple, Robt., Beeton.
Shantz, Joshua M., Haysville.
Shellard, Morris, Galt.
Sherick, Daniel, & Son, Bethesda.
Shier, Silas N., Kirkton.
Sibbald, John, Leith.
Simpson, Fred O. R., Newmarket.
Sleightholm, J. A., Humber.
Slimmon, W. W., Glenallan.
Sloan, A. C., Bradford.
Smillie, A. G., Hensall.
Smith, David, Carluke.

Smith, Jas., Unionville.
Smith & Eadie, Vars.
Smith, Ozro, Tyrrell.
Smith & Richardson, Columbus.
Smith, A. W., Maple Lodge.
Smith, J. W., Stewart.
Smith, Neil, Brampton.
Smith, Robert B., Columbus.
Snyder, Wm. J., Mayfield.
Sonley, R. Frank, Utica.
Sorby, O., Guelph.
Spearin, Geo., St. Mary's.
Stanley, W. J., Pickering.
Staples, J. F., Ida.
Steckley, Peter, Bethesda.
Stevenson, James, Melbourne.
Stevenson, Wm., Melbourne.
Stewart, James, Salem.
Stewart, John, Appleton.
Story, Robert, & Son, Crossland.
Story, William, Bloomington.
Stouffer, N., Stouffville.
Sullivan, Jno., Centralia.
Summerfeldt, L., Unionville.
Sutherland, Donald.
Swain, J. C., Cavan.
Tarr, Nathan, Stouffville.
Taylor, Duncan, Hensall.
Taylor, James, Oakwood.
Thom, Alex., Morrisburg.
Thompson, Geo. H., Farewell.
Thompson, Nathaniel, Orangeville.
Timms, A. C., Winchester.
Tole, E. B., Blenheim.
Torrance, James, Markham.
Touriss, C. A., Riverbank.
Tran, W. H., Cedar Grove.
Trott & Son, E., Christina.
Turner, J. B., Stouffville.
Umphrey, W. H., Udora.
Vance, David, Tavistock.
Vance, Jno., Tavistock.
Van Nostrand, Geo. J., Vandorf.
Veale, Jno., Sr., Beaverton.
Vipond, Jno. Brooklin.
Wagester, William, Tavistock.
Wagg, Nelson, Claremont.
Waldbrook, Wm., Hagersville.
Walden, T. H., Lindsay.
Wallace, G. A., Ponsonby.
Wallace, J. H., North Gower.
Wallace, W. W., London.
Ward, Edwin, Greenbank.
Ward, F. H., Bethany.
Watson, Henry, Sprucedale.
Watson, Jno. Seagrave.
Watson, Robt., Dublin.
Watson, Wm. J., Bradford.
Watt, J. A. Salem.
Watts, Thos., Holt.
Way, R. G. Trenton.
Webb, James, Bondhead.
Webster, Albert E., Oakwood.
Webster, Bros., Whitby.
Webster, James, Lansing.
Webster, Wesley W., Lindsay.
Weitzel, Jno. N. Cassell.
Weller, Albert, Zephyr.
Wells, J. H., Eversley.
Welsh, Henry, Weston.
White, Job, Ashburn.
Whiteside, T. M., Innerkip.
Whyte, Geo. H., Clifford.
Wilbur, Geo. L., Taunton.
Wilcox, Joseph, Stayner.
Wilkin, W. G., Harriston.
Wilkinson, Augus, Sonya.
Wilkinson, Geo., Fanshawe.
Williamson, A., Ingersoll.
Williamson, Isaac, Toronto.
Wilson, Geo. T., Balsam.
Wilson, Norman F., Cumberland.
Wilson, I. L., McGarry.
Wilson, Jas. A., Elginfield.
Witherspoon, A. J., Humber.
Wood, R. T., Etobicoke.
Wood, William, Bradford.
Woodley, Wm. & Sons, Dundas.
Woods, Jas. S., Mount Forest.
Young, Wm. & Son, Mount Brydges.
Wood, T. A., Bradford.

NAME AND ADDRESS.	BREED.
Abbott, Fred, Harrietsville.	Holstein-Friesians.
Adamson, Edgar, Erindale	Holstein-Friesians.
Agricultural College, Guelph.	Ayrshires.
Aitken, T. B., Teeswater	Herefords.
Algodale Farm, Cass Bridge	Ayrshires.
Alguire, Leslie, Berwick	Ayrshires.
Alton, H. E., Jr., Everton	Shorthorns.
Amos, George & Son, Moffatt.	Shorthorns.
Anderson, George W., Rossmore	Holstein-Friesians.
Anderson, John J., Glen Buell	Ayrshires.
Appel, George, Mitchell	Ayrshires.
Archer, T. J., Warwick	Herefords.
Armstrong, H., Rosemount	Herefords.
Armstrong, John, Belgrave.	Shorthorns.
Armstrong, John, Tillsonburg.	Holstein-Friesians.
Armstrong, Wm. S., Burford	Holstein-Friesians.
Ashworth, David A., Maple Grove	Ayrshires.
Auld, A. F. & G., Eden Mills	Shorthorns.
Ayles & McNeil, Dutton	Herefords.
Bagg, Thos., Weston	Holstein-Friesians.
Bailey, Arnott, Hagersville	Holstein-Friesians.
Bailey, W. J., Nober	Holstein-Friesians.
Bald, Wm. J., Sebringville	Holstein-Friesians.
Baldwin, George A., Dunnville	Holstein-Friesians.
Bales, O. D., Lansing	Holstein-Friesians.
Ballantyne, W. W., Stratford	Ayrshires.
Barber, Frank, Villa Nova.	Holstein-Friesians.
Barnett, Jas. W. Brooklin	Shorthorns.
Barnett, Robert, Currie's	Holstein-Friesians.
Barr, B. R., Harrietsville	Holstein-Friesians.
Barton, John M., & Son, Vankleek Hill	Ayrshires.
Bass, Wm., Newboro.	Ayrshires.
Batty, W. F., Brooklin	
Bedgood, Thomas E., McWilliams	Holstein-Friesians.
Begg, James, Box 88, St. Thomas	Ayrshires.
Begg, Victor, Moose Creek	Ayrshires.
Bell, Wm., V.S., Vars	Ayrshires.
Benfield, H. G., Woodstock	Holstein-Friesians.
Benning, James, Willlamstown	Ayrshires.
Bigelow, Samuel, Canning	Ayrshires.
Bingeman, J. B., Bridgeport	Shorthorns.
Binnette, J. Fred., St. Anne de Prescott.	Ayrshires.
Binnie, James, Erin	Aberdeen-Angus.
Black, J. Allen, Kingston	Ayrshires.
Blais, Adolphe, Glen Sandfield	Ayrshires.
Blayney, J. E., Lynnville	Holstein-Friesians.
Blaw, J. A., Woodstock	Holstein-Friesians.
Bobier, E. M., Ingersoll	Holstein-Friesians.
Bogart, J. W., Morewood	Ayrshires.
Bollert, C. R., Tavistock	Holstein-Friesians.
Bollert, E., Tavistock	
Bollert, H., Cassell	Holstein-Friesians.
Bowley, Walter W., Napperton.	Ayrshires
Bowman, James, Guelph	Aberdeen-Angus.
Bowman, W. J., Ingersoll	Holstein-Friesians.
Bowser, H. E., Delta	Ayrshires.
Bowyer, C. W., Silver Hill	Holstein-Friesians.
Boyd, Mossom & Co., Bobcaygeon	Herefords.
Brawley, N. W., Beeton	Herefords.
Bray, Samuel, Enfield	
Brock, R. B., Jarvis	Holstein-Friesians.
Brookeld, R. J., Tillsonburg.	Holstein-Friesians.
Brown, J., & Son, Galt	Shorthorns.
Brown, John, Oxford Centre	Holstein-Friesians.
Brown, John C., Stamford	Ayrshires and Holstein-Friesians.
Brown, Jos., Mt. Forest	Herefords.
Brown, R. H., Hartley	Ayrshires.
Bryant, Wm. A., Cairngorm	Holstein-Friesians.
Buchanan, J. & Son, Kerwood	Aberdeen-Angus.
Buchanan, John, Elia	Holstein-Friesians.
Buck, Nelson, Tyrrell	Holstein-Friesians.
Buckrell, John, Beaconsfield	Holstein-Friesians.
Bull & Son, B. H., Brampton	Jerseys.
Burr, Peter, Bloomfield	Holstein-Friesians.
Burrill, F. I., Holbrook	Holstein-Friesians.
Burt, D., St. George	Holstein-Friesians.
Butler, Chas., St. Thomas.	Holstein-Friesians.

Butler, Edwin, Norwich ..... Holstein-Friesians.
Callander, James, North Gower ..... Ayrshires.
Cameron, A., Howick, Que. .....
Campbell, A. B., Golspie. ..... Holstein-Friesians.
Campbell, John, Dalmeny ..... Ayrshires.
Campbell, John, Vankleek Hill ..... Ayrshires.
Campbell, John R., Dalkeith ..... Ayrshires.
Campbell, Peter, Russell. ..... Ayrshires.
Campbell, W. J., Golspie. ..... Holstein-Friesians.
Canadian Pacific Railway, Caledonia Spgs.. Ayrshires.
Canfield, Chas. V., Vandecar ..... Holstein-Friesians.
Carlisle, G. F., Newtonbrook ..... Holstein-Friesians.
Carlyle, W. J., Chesterville ..... Ayrshires.
Carter, Maynard, Aylmer ..... Ayrshires.
Caughell, David, Yarmouth Centre ..... Holstein-Friesians.
Caughell, G. H., St. Thomas. ..... Holstein-Friesians.
Chambers, E. C., Fairfield Plains ..... Holstein-Friesians.
Chatterson, Elson A., Mohawk ..... Holstein-Friesians.
Christie, A., Melvin ..... Ayrshires.
Clare, Herbert, Norwich ..... Holstein-Friesians.
Clark, Alex., Brinston Corners ..... Ayrshires.
Clark, Wm., Meyersburg ..... Ayrshires.
Clarkson, John, Summerville ..... Holstein-Friesians.
Clemons, G. W., St. George ..... Holstein-Friesians.
Clifford, L. O., Oshawa. ..... Herefords.
Cline, John W., Boston ..... Holstein-Friesians.
Clute, Justice R. C., Osgoode Hall, Toronto Ayrshires.
Cohoe, D. B., New Durham ..... Holstein-Friesians.
Cohoe, D. P., New Durham ..... Holstein-Friesians.
Cohoe, W. J., New Durham ..... Holstein-Friesians.
Cohoon, E., Harriettsville ..... Ayrshires.
Coke, James, Erin ..... Aberdeen-Angus.
Colborne, Bros., Winchester ..... Ayrshires.
Collier Bros., Beachville ..... Ayrshires.
Comfort, Albin M., Elcho ..... Ayrshires.
Cook, B. G., Ingersoll ..... Holstein-Friesians.
Cook, David, Amulree .....
Corcoran, E. P., Warden ..... Ayrshires.
Cornwall, A. E., Norwich ..... Holstein-Friesians.
Crawford Bros., Brown's Corners ..... Ayrshires.
Creighton, J. C., Hawley ..... Ayrshires.
Cryderman, F. S., Osnabruck Centre ..... Ayrshires.
Cudmore, Chas., Sprucedale ..... Herefords.

Cumberland, Barlow, Port Hope. ..... Ayrshires.
Cumming, A. J., Heckston ..... Ayrshires.
Cumming D., Russell ..... Ayrshires.
Cumming, Donald, Lancaster ..... Ayrshires.
Cumming, Jas., Blyth .....
Daniel, Chas., Verschoyle ..... Ayrshires.
Darragh, E. J., Pendleton. ..... Ayrshires.
Davis & Son, George, Alton,. ..... Aberdeen-Angus.
Day, M. L., Delta ..... Ayrshires.
Death, George T., Dixie ..... Holstein-Friesians.
Decarie, Chas. C., Dorval, Que. ..... Ayrshires.
Deeks, John H., Dunbar ..... Ayrshires.
Deeks, Thomas L., Williamsburg ..... Ayrshires.
Deller, Wm. H., Norwich ..... Holstein-Friesians
Dennis, Edgar, Armitage ..... Holstein-Friesians
Dent, T. H., Woodstock ..... Holstein-Friesians
Denyes, H. K., Foxboro. ..... Ayrshires.
Detweiler, S. S., Preston ..... Holstein-Friesians
Dewitt, Thos. Z., Elliott ..... Herefords.
Dickieson, John, Rockwood .....
Dickieson, W. J., Hespeler .....
Dillon, Jacob, Ellisville ..... Ayrshires.
Dominion Experimental Farm, Ottawa .... Ayrshires.
Donald, A. T., Burnbrae ..... Ayrshires.
Dougherty, R. E., Oxford Centre ..... Holstein-Friesians.
Douglas, James, Caledonia .....
Douglas, W. J., Vankleek Hill ..... Ayrshires.
Drummond, W. J., Ottawa .....
Duff, John, Rockwood ..... Galloways.
Dunkin, T. L., Norwich ..... Holstein-Friesians.
Dunn, Andrew, Ingersoll ..... Holstein-Friesians.
Durnin, W. R., Lucknow .....
Dwyer, I., Freelton ..... Galloways.
Dyer, J. A., St. Catharines ..... Holstein-Friesians.
Dyer, W. D., Columbus ..... Shorthorns.
Dyke, C. R., Armitage ..... Holstein-Friesians.
Dyment, N., R. R. No. 2, Hamilton ..... Ayrshires.
Eadie, A. G., Vars ..... Ayrshires.
Eadie, J. R., Russell ..... Ayrshires.
Eastman, John W., Russell ..... Ayrshires.
Easton, E. H., Lyn ..... Ayrshires.
Ede, P. D., Oxford Centre ..... Holstein-Friesians.
Edmondson, Chris., Brantford ..... Holstein-Friesians.

DOMINION CATTLE BREEDERS' ASSOCIATION, 1910-1911.—*Continued.*

Name and Address.	Breed.
Edwards, Anthony, Chatham	Ayrshires.
Edwards, Isaac, Beachville	Ayrshires.
Elliott, George S., Tillsonburg	Holstein-Friesians.
Elliott, W. F., Coleman	Holstein-Friesians.
Emmett, C. D., Southend	Holstein-Friesians.
Empey, Adam M., Springfield	Ayrshires.
Ewing, F. W., Salem	Shorthorns.
Eyre, H. E., Chantry	Ayrshires.
Fairbairn, T. L., Billings Bridge	Ayrshires.
Farlinger, W. K., Morrisburg	Ayrshires.
Ferguson, Fred. S., Inverary	Holstein-Friesians.
Fergusson, Geo. A., Tillsonburg	Holstein-Friesians.
Fetterly & Sons, Martin, Russell	Ayrshires.
Fierheller, C. D., Mt. Elgin	Holstein-Friesians.
Fierheller, E. E., Mt. Elgin	Holstein-Friesians.
File, Dr. A. J., Ameliasburg	Ayrshires.
Fisher, M. Vicars, Glanworth	Holstein-Friesians.
Fitzsimmons, R., & Son, Clinton	Grades.
Flatt, D. C., Millgrove	Holstein-Friesians.
Flatt, J. I., Millgrove	Holstein-Friesians.
Fleming, Henry, Craigleith	Herefords.
Forget, Rev. J. W., Emburn	Ayrshires.
Forester, A. C., Oakville	Aberdeen-Angus.
Forrest, Thos., Guelph	
Fraser, Mrs. Agnes, Weston	Holstein-Friesians.
Fried, Lawrence, Roseville	Shorthorns.
Fyles, F. B., Abercorn	Ayrshires.
Garrett, Alfred, Inverary	Holstein-Friesians.
George, E. D., Putnam	Holstein-Friesians.
George, W. W., Crampton	Holstein-Friesians.
Gerow, C. W., Guelph	Grades.
Gibbons, W. T., Northcote	Ayrshires.
Gies, C. R., Heidelburg	Holstein-Friesians.
Gilbert, H. J., Dereham Centre	Holstein-Friesians.
Gillies, Wm., Robb	Herefords.
Gilmour Bros., Rosemere	Ayrshires.
Gilroy, Joshua, Lyn	Ayrshires.
Glass, John W., Roxham	Ayrshires.
Gough, Wm. H., Bloomfield	Holstein-Friesians.

Name and Address.	Breed.
Graham, D. A., Wanstead	
Gray Nuns, The, Ottawa	Ayrshires.
Gregg, F. H., Salford	Holstein-Friesians.
Grenybach, W. H., Hickson	Ayrshires.
Griese, A. B., Lougheed	Ayrshires.
Griffin, F. J., Burgessville	Holstein-Friesians.
Guy, F. T., Darlington	Ayrshires.
Guy, S. W., Clarksburg	Herefords.
Hager, C. W., Welland	Holstein-Friesians.
Haley, M. H., Springford	Holstein-Friesians.
Haley, M. L., Springford	Holstein-Friesians.
Hall & Robson, Washington	
Hallman, A. C., Breslau	Holstein-Friesians.
Hamill, H. C., Box Grove	Ayrshires.
Hamilton, George, Guelph	Holstein-Friesians.
Hanmer, E. E., Norwich	Holstein-Friesians.
Hanmer, Willoughby, New Durham	Holstein-Friesians.
Harding, R. H., Thorndale	Holstein-Friesians.
Hare, John H., Rowena	Holstein-Friesians.
Hare, W. T., Aylmer.	Ayrshires.
Harris, Frank H., Mt. Elgin	Ayrshires.
Harris, J. E., Colchester.	Herefords.
Harrison, Frank, Mt. Albert	Herefords.
Harrison, George, Kincardine	Holstein-Friesians.
Harrison, Jas. E., Kincardine.	Holstein-Friesians.
Harrison, Joshua, York Mills.	Holstein-Friesians.
Harrison, W. H., Mt. Albert.	Herefords.
Hartley, Miles, Norwich	Holstein-Friesians.
Hartley, Stephen, New Durham	Holstein-Friesians.
Hartley, Thos., Downsview	Holstein-Friesians.
Hartley, W. A., New Durham	Holstein-Friesians.
Heeney, Fred V., Ingersoll	Holstein-Friesians.
Henderson, B. N., Morton.	Ayrshires.
Hendy, Chas., Campbellford	Ayrshires.
Hensman, W. G., Essex	Ayrshires.
Herron, J. H., Courtland	Holstein-Friesians.
Herbst, George, Alsfeldt	Holstein-Friesians.
Hicks, R. F., Newton Brook	Holstein-Friesians.
High, Isaac W., South Cayuga.	Holstein-Friesians.

Hill, George, Delaware .....Ayrshires.
Hill, J. W., St. Thomas .....Holstein-Friesians.
Hilliker, C. N., Burgessville .....Holstein-Friesians.
Hoare, Jacob, The Maples. .....Herefords.
Hoffman, D. B., Hawkesville. .....Holstein-Friesians.
Holtby, Benjamin, Belmont .....Holstein-Friesians.
Homer-Dixon, Mrs., Niagara Falls, South ..Ayrshires.
Hudson, Jos. & Son, Lyn. .. ..Ayrshires.
Hughes, John H., Burgessville .....Holstein-Friesians.
Hulet, A. E., Norwich .....Holstein-Friesians.
Hume, Alex. & Co., Menie .....Ayrshires.
Humphrey, Herbert, Amberley .....Holstein-Friesians.
Hunt, B. J., Ottawa South .....Ayrshires.
Hunter, A. S., Durham. .....Herefords.
Hunter, J. & J., Durham .....Herefords.
Hunter, Robert, Maxville. .....Ayrshires.
Hunter, Mrs. W. H., The Maples. .....Herefords.
Hunter, Wm., Maxville. .....Ayrshires.
Immerson, C. J., Lyn. .....Ayrshires.
Inch, Frank, Kerwood .....Ayrshires.
Ionson, James, Scarboro Jct. .....Holstein-Friesians.
Jackson, Heber, Guelph. .....
Jackson, John J., Port Law .....Herefords.
James, D. A., Nilestown. .....Ayrshires.
Jardine, David S., Nelson. .....Holstein-Friesians.
Jerome, Holbert, Glanford. .....Holstein-Friesians.
Johnston, B. C., Hespeler .....Ayrshires.
Johnston, Frank, Boston. .....Holstein-Friesians.
Johnston, John A., Dungannon .....Herefords.
Johnston, R. W., Boston .....Holstein-Friesians.
Johnson, Wm. H., Avon. .....Holstein-Friesians.
Jones, F. H., Bowmanville. ..... Holstein-Friesians.
Jull, George, Ranelagh. .....Holstein-Friesians.
Kains, Alfred, Byron. .....Ayrshires.
Kelly, Arthur, Vanessa .....Holstein-Friesians.
Kelly, Byron, Kelvin. .....Holstein-Friesians.
Kelly, P. E., Clarkson. .....Holstein-Friesians.
Kelly, R. J., Tillsonburg. .....Holstein-Friesians.
Kennedy, A., Ayr. .....Holstein-Friesians.
Kennedy & Son, Vernon. .....Ayrshires.
Kettle, C. C., Wilsonville. .....Holstein-Friesians.
Kilgour, George, Delmar .....Holstein-Friesians
Kinkade, Dr., Russell .....Ayrshires.
Kinsey, Joseph, Doon. .....Ayrshires.
Kitchen, D. D., Renton .....Holstein-Friesians.
Kitchen, F. D., Tyrrell. .....Holstein-Friesians.
Kitchen, George A., Wallbridge. .....Ayrshires.
Kitchen, S. G., St. George. .....Holstein-Friesians.
Klack, Alonzo J., Aylmer. .....Ayrshires.
Knight, Joshua, Elginburg. .....Ayrshires.
Knox, John, Fenelon Falls. .....Ayrshires.
Knox, John, Millbank .....Holstein-Friesians.
Krick, David, Stoney Creek .....Holstein-Friesians.
Kyle, Bros., Ayr. .....Shorthorns.
Laidlaw, E. W. N., Aylmer. .....Holstein-Friesians.
Laidlaw, George A., Aylmer. .....Holstein-Friesians.
Laidlaw, Lloyd K., Aylmer. .....Holstein-Friesians.
Lambkin, W. L., Fordwich. .....Holstein-Friesians.
Lear, F. L., Orland. .....Ayrshires.
Lee, J. W., Simcoe .....Holstein-Friesians.
Lee, R. S., Williamsford .....Herefords.
Leeson, F., Aylmer. .....
Leeson, F. Arthur, Aylmer. .....Holstein-Friesians.
Legge, F. A., Jefferson .....Holstein-Friesians.
Leitch, David, Cornwall. .....Ayrshires.
Lemon, Samuel, Lynden .....Holstein-Friesians.
Lemon, Wilbur, Lynden .....Holstein-Friesians.
Leslie Bros., Rockwood. .....
Lester, H. A., Burford. .....Holstein-Friesians.
Lewis, Wm., Dunsford. .....Herefords.
Liddycoat, N. D., Waterdown. .....Ayrshires.
Lindsay, Dr. J., Guelph. .....Herefords.
Lloyd, Edwin A., Stouffville. .....Holstein-Friesians.
Lloyd, F. A., Newmarket. .....Holstein-Friesians.
Lloyd-Jones, T. & J., Burford. .....
Locke, John, Campbellford. .....Ayrshires.
Logan, Robert J., North Glanford .....Holstein-Friesians.
Londry, R. M., Epping .....Herefords.
Lorsh, Albert, Elmira. .....Holstein-Friesians.
Loveless, R. M., Agincourt. .....Holstein-Friesians.
Low, John, Elora .....Aberdeen-Angus.
Lowe, B. J., Bearbrook .....Ayrshires.
Lucas, G. W., Odessa .....Holstein-Friesians.
Lyons, Harry, Berwick .....Ayrshires.
McArthur, Jane and Maggie, North LancasterAyrshires.
McBain, D. C., St. Thomas. .....Holstein-Friesians.

DOMINION CATTLE BREEDERS' ASSOCIATION, 1910-1911.—*Continued.*

Name and Address.	Breed.
McCaskill, Alex., Barb.	Ayrshires.
McConnell, Ross, Luton.	Ayrshires.
McCormack, James, Rockton	Ayrshires.
McCormick, Chas. R., Ratho.	Holstein-Friesians.
McCrae, D., Guelph.	Guelph.
McCrimmon, D. R., Lancaster	Holstein-Friesians.
McCubbin, John, Warkworth	Ayrshires.
McDermott, J. A. & P., Stayner.	Herefords.
McDonald, Alex, Avonmore.	Holstein-Friesians.
McDonald, F. E., Picton	Ayrshires.
McDonald, Hubert, Bloomfield.	Holstein-Friesians.
McDonald, John A., Williamstown.	Ayrshires.
McDougall, H., Guelph.	
McDowell, M., Norwich.	Holstein-Friesians.
McElroy, W. A., Chesterville.	Ayrshires.
McEwen, Wm. K., Hawthorne.	Holstein-Friesians.
McEwing, A. W., Harlock.	Aberdeen-Angus.
McFarlane, G. A., Balderson.	Ayrshires.
McGhee, Robert, Beachville.	Holstein-Friesians.
McGhee, S. J., Beachville.	Holstein-Friesians.
McGregor, Peter A., Felton.	Ayrshires.
McGugan, Neil, Frome	Holstein-Friesians.
McInnes, John D., Glenpayne.	Ayrshires.
McIntosh, Alex., Nudell Bush.	Ayrshires.
McIntosh, G. F., Seaforth.	Aberdeen-Angus.
McIntosh, James, Gourcock	
McIntosh, Peter, Cass Bridge.	Ayrshires.
McIntyre, Wm., Newington.	Ayrshires.
McKay, James, Medina.	Holstein-Friesians.
McKee, H. & J., Norwich.	Ayrshires.
McKenzie, Angus, Vankleek Hill.	Ayrshires.
McKenzie, G. H., Thornhill.	Holstein-Friesians.
McKenzie, John, Willowdale.	Holstein-Friesians
McKillican, M. C., Moose Creek.	Ayrshires.
McKinney, Alex., Erin.	Aberdeen-Angus.
McLane, S. J., Harrisburg.	Holstein-Friesians
McLaren, P. S., McGarry.	Ayrsbires.
McLean, W. F., Donlands.	Ayrshires.
McLennan, John, Laggan.	Ayrshires.
McLeod, D. A., Brooksdale.	Holstein-Friesians.
McLeod, John D., Moose Creek.	Ayrshires.
McMillan Bros., Dunbar.	Ayrshires.
McMillan, D. E., Laggan.	Ayrshires.
McMillan, D. P., Alexandria	Ayrshires.
McPherson, Wilson, Silverdale.	Ayrshires.
McQueen, Robert, Courtland.	Holstein-Friesians.
McQueen, T. W., Tillsonburg.	Holstein-Friesians.
Mackie, R. J., Oshawa.	Herefords.
Macklin, S., Weston.	Holstein-Friesians.
Macoun, Charles, Campbellford.	Ayrshires.
Mair, James, Dobbinton.	Herefords.
Mair, Thos. & Wm., Peabody.	Herefords.
Mallory, J. M., Bloomfield.	Holstein-Friesians.
Mallough, J. A., Dungannon.	Aberdeen-Angus.
Manderville, Jas., Tyrell	Holstein-Friesians.
Mann, Fred, Dundas.	Holstein-Friesians.
Marquis, Wm., Uxbridge.	
Martin, R. B., Elmira	Holstein-Friesians.
Mason, Wm. E., Tyrell.	Holstein-Friesians.
Mehary, Robert, Russell.	Ayrshires.
Melick, Aaron, Smithville.	Ayrshires.
Merrill, Cecil E., New Durham.	Holstein-Friesians.
Merritt, Paul, Beamsville.	Holstein-Friesians.
Merryweather, A., Ridgetown.	Ayrshires.
Metcalfe, Robert, Packenham.	Ayrshires.
Michener, Martin, Dunnville.	Ayrshires.
Miller, Robert J., Fonthill.	Holstein-Friesians.
Mishlhausen, Wm., Walkerton.	
Mitchell Bros., Norham.	Herefords.
Mitchell, Wm., Bainsville.	Ayrshires.
Mittlefehldt, A., Elcho	Holstein-Friesians.
Mittlefehldt, Jas. H., Elcho.	Holstein-Friesians.
Mode, C. D., Vankleek Hill.	Ayrshires.
Montgomery, Elgin, South Mountain	Ayrshires.
Montgomery, W. L., Gravel Hill.	Ayrshires.
Montmorency, George de, Woodstock.	Holstein-Friesians.
Moore, Benjamin L., Burgessville.	Holstein-Friesians.
Moore, J. T., Sandford.	Herefords.

Moore, Sam. D., New Dublin. .....Ayrshires.
Morden, A. A., Wellington. .....Ayrshires.
Morrison, John A., Mount Elgin. .....Ayrshires.
Morrison, John R., Menie. .....Ayrshires.
Motheral, James, Drumbo. .....Holstein-Friesians.
Moynihan, J., Don. .....Holstein-Friesians.
Murray, B. J. Martintown. .....Ayrshires.
Nancekivell, R., Sr., Ingersoll. .....Holstein-Friesians.
Nelles, C. Duff, Boston. .....Holstein-Friesians.
Nelles, Lorne C., Boston. .....Holstein-Friesians.
Ness, R. R., Howick, Que. .....
Newton, J. L., Chapman. .....Ayrshires.
Nichols, Ira, Norwich. .....Holstein-Friesians.
Nickle, Henry, Everton. .....
Nixon, Howden, Ingersoll. .....Holstein-Friesians.
North, George, Guelph. .....Holstein-Friesians.
O'Connor, J., Campbellford. .....Ayrshires.
Oddie, T. M., Menie. .....Ayrshires.
Oliver, George, Bright. .....Holstein-Friesians.
Oliver, T. T., Cobourg. .....Ayrshires.
Oliver, Thomas, Maple. .....Holstein-Friesians.
O'Neil Bros., Southgate. .....Herefords.
Ormiston, Wm. & Sons, Columbus. .....
Owens, S. W., Antrim .....Ayrshires.
Paisley, James, Mt. Elgin. .....Ayrshires.
Pallett, Geo. Wm., Summerville. .....Holstein-Friesians.
Palmer, B. J., New Durham. .....Holstein-Friesians.
Palmer, E. B., Norwich. .....Ayrshires.
Palmer, George R., Summerstown. .....Ayrshires.
Palmer, J. J. & T. E., Tuam. .....Herefords.
Parkinson, G. & W., Guelph. .....
Passmore, F. S., Brantford. .....Holstein-Friesians.
Paterson, T. G., Rayside. .....Holstein-Friesians.
Patten, Waller, St. George. .....Holstein-Friesians.
Patterson, A. L., Harriston. .....Holstein-Friesians.
Patterson, H. F., Alford Junction. .....Holstein-Friesians.
Paul Bros., Chrysler. .....Ayrshires.
Peacock, Grace E., Mount Salem. .....Holstein-Friesians.
Pearce, Arthur, Cornell. .....Holstein-Friesians.
Pearce, C. J., Ostrander. .....Holstein-Friesians.
Pearce, Thos., Cornell. .....Holstein-Friesians.
Pearce, W. M., Tillsonburg. .....Holstein-Friesians.
Penhale, R. A., St. Thomas. .....Holstein-Friesians.
Penhall, R. J., Villa Nova. .....Herefords.
Percival, G. W., Glen Buell. .....Ayrshires.
Perdue, H. T., Wingham. .....Herefords.
Pettit, F. E., Burgessville. .....Holstein-Friesians.
Poole, Chauncey, Norwich. .....Holstein-Friesians.
Poole, Samuel, Norwich. .....Holstein-Friesians.
Porteous, D. W., Ormond. .....Ayrshires.
Pound, Wm. F., Aylmer. .....Holstein-Friesians.
Pumegar, Luther, Dorchester Station. .....Ayrshires.
Pritchard, George B., Elora. .....
Prouse, G. T., Ostrander. .....Holstein-Friesians.
Prouse, Thos., Dereham Centre .....Holstein-Friesians.
Prouse, Wm., Dereham Centre. .....Holstein-Friesians.
Prouse, W. C., Ostrander. .....Holstein-Friesians.
Randall, Jas. & Son, Highgate. .....Herefords.
Rannie, Wm., Menie. .....Ayrshires.
Raymond, Jos., Ingersoll. .....Holstein-Friesians.
Reed, H. Mimosa. .....Herefords.
Reed, H. J., Epping. .....Herefords.
Reid, Wm., Murillo. .....Ayrshires.
Rennick, G. M., Vankleek Hill. .....Ayrshires.
Rettie, James, Norwich. .....Holstein-Friesians.
Rice, Alfred, Curries .....Holstein-Friesians.
Rice, George, Tillsonburg. .....Holstein-Friesians & Ayrshires.
Richardson, J. W., Caledonia. .....Holstein-Friesians.
Richardson, Matthew, Caledonia .....Holstein-Friesians.
Riddell, John A., Ritson. .....Ayrshires.
Rife, David, Hespeler .....Holstein-Friesians.
Rife, Wm. A., Hespeler. .....Holstein-Friesians.
Ritchie, Mr., Saurin. .....Herefords.
Rivers, Walburn, Folden's .....Holstein-Friesians.
Robb, G. B., Sheffield. .....Holstein-Friesians.
Robbins, C. V., River Bend. .....Holstein-Friesians.
Robertson, David, M.D., Milton. .....Holstein-Friesians.
Robertson, W. H., Almonte. .....Ayrshires.
Robinson, A. T., Markham .....Holstein-Friesians.
Roblin, W. H. C., Ameliasburg. .....Ayrshires.
Rogers, A. S. Sparta. .....Holstein-Friesians.
Rooke, Geo., Dereham Centre .....Holstein-Friesians.
Rosebrugh, Harry, St. George. .....Holstein-Friesians.
Ross, J. B., Streetsville. .....Ayrshires.
Ross & Mackenzie, Nairn .....Herefords.

DOMINION CATTLE BREEDERS' ASSOCIATION, 1910-1911.—*Concluded.*

Name and Address.	Breed.
Rothwell, B., Ottawa.	Ayrshires.
Row, Fred, Curries.	Holstein-Friesians.
Rowse, Jas. C., Crompton.	Holstein-Friesians.
Ruby, Elias, Burgessville.	Holstein-Friesians.
Ryder, John F., Harley.	Holstein-Friesians.
Sackride, Roy, Burgessville.	Holstein-Friesians.
Sager, Lawrence, St. George.	Holstein-Friesians.
Sager, Wellington, St. George	Holstein-Friesians.
Sandilands, John, Williamstown	Ayrshires.
Saunders, Albert, Sykeston.	Ayrshires.
Scheifele, A. W., Heidelberg.	Holstein-Friesians.
Scheli, M. S., Woodstock.	Holstein-Friesians.
Scheli, Walter S., Woodstock.	Holstein-Friesians.
Scott, John, Innerkip	Ayrshires.
Sexsmith, M. W., Ridgeway.	Ayrshires.
Shantz, Daniel, E., Berlin.	Holstein-Friesians.
Shantz, M. M., Berlin.	Holstein-Friesians.
Sharp, James, Rockside.	Aberdeen-Angus.
Shaw, Robert, Brantford	Galloways.
Shearer, Wm. S., Listowel	Holstein-Friesians.
Shellington, Robert, Harley.	Holstein-Friesians.
Sherriff, Wm. & G. G., Clarence	Ayrshires.
Shuttleworth, H. P., Ingersoil	Holstein-Friesians.
Sifton, Chas. Cairngorm.	Holstein-Friesians.
Simmons, W. H., New Durham	Holstein-Friesians.
Simpson, Jas., South Augusta.	Ayrshires.
Sinclair, Thos. B., Brigden.	Holstein-Friesians.
Skippon. Thos., Hyde Park.	Herefords.
Slaght, Wm., Bealton.	Holstein-Friesians.
Slater, Wm., Gait.	Ayrshires.
Slaper, Wm., Cobourg.	Ayrshires.
Smiley, S. H., St. Thomas.	Holstein-Friesians.
Smith, A. E., Millgrove.	Holstein-Friesians.
Smith, A. W., Maple Lodge.	Shorthorns.
Smith, C. E., Scotland.	Holstein-Friesians.
Smith, G. W., Dundas	Holstein-Friesians.
Smith, H. D., Hamilton.	Herefords.
Smith, Ozro, Tyrell.	Holstein-Friesians.
Smith, Reginald, J. A., Fairfield Plains.	Ayrshires.
Smith, Robert, Millgrove.	Holstein-Friesians.
Smith, Wm. C., Burgessville.	Holstein-Friesians.
Snyder, Elias, Burgessville.	Holstein-Friesians.
Somers, John, Rockford.	Holstein-Friesians.
Stanley, H., Ottawa.	
Stansell, J. L., Tillsonburg.	Ayrshires.
Stark, J. H., Lang.	Ayrshires.
Steacy, R. G., Lyn.	Ayrshires.
Steele, W. J., Newington.	Ayrshires.
Stephens, Byron, Brigden.	Holstein-Friesians.
Stevenson, H. H., St. Marys.	Herefords.
Stewart, Fred, Elfrida.	Holstein-Friesians.
Stewart, J. A., Menie.	Ayrshires.
Stewart, Sr., Jas. & Co., Menie.	Ayrshires.
Stewart, M. A., Streetsville.	Holstein-Friesians.
Stewart, Peter, Everton.	Shorthorns.
Stewart Jr., Wm. & Son, Menie.	Ayrshires.
Stewartson, Wm., Vienna.	Ayrshires.
Stokes, Geo. H., Tweed	Ayrshires.
Stone, Alfred, Guelph.	Herefords.
Strobridge, Frank, Thamesford.	Holstein-Friesians.
Stroud, Thos., Tillsonburg.	Holstein-Friesians.
Stutt, R. W., Forest	Herefords.
Suddaby, Milton, Heckston.	Ayrshires.
Suhring, Otto, Sebringville.	Holstein-Friesians.
Suhring, Wm., Sebringville.	Holstein-Friesians.
Sutcliffe, Wm., Aberarder.	Ayrshires.
Swance, B., Tillsonburg.	Holstein-Friesians.
Tackell, Wm., Holbrook.	Holstein-Friesians.
Tapley, Wm. F., Norwich.	Holstein-Friesians.
Taylor, F. W., Wellman's Corners.	Ayrshires.
Taylor, J. H., Scotland.	Holstein-Friesians.
Taylor, John J., Cassburn.	Ayrshires.
Taylor, J. M., Guelph.	
Taylor, Lloyd, Scotland.	Holstein-Friesians.
Teeft, Thaddeus, N., Smithville.	Ayrshires.
Teeple, A. H., Curries.	Holstein-Friesians.
Telfer, John B., Wilton	Galloways.
Telfer, Thos. G., Ingersoll.	Holstein-Friesians.

Thomson, J. G., Mildmay. ..... Shorthorns
Thomson, Wm. E., Woodstock. ..... Holstein-Friesians.
Thorne, Wm., Lynedoch. ..... Ayrshires.
Thurston, R. E., Bobcaygeon. ..... Herefords.
Tindale, Jos., Shelburne. ..... Herefords.
Tinkess, S. W., Avonmore. ..... Holstein-Friesians.
Tompkins, B. A., Heckston. ..... Ayrshires.
Toms, Fred A., Simcoe. ..... Ayrshires.
Touchette, Esdros, St. Anne de Prescott ... Ayrshires.
Tran, W. H., Cedar Grove ..... Ayrshires.
Tree, Ezekiel, Woodstock. ..... Holstein-Friesians.
Treffry, W. J., Hawtrey ..... Holstein-Friesians.
Trethewey Model Farms, Weston. ..... Ayrshires.
Trotter, R. W., M.D., Waterford. ..... Holstein-Friesians.
Tunmon, W. E., Crookston. ..... Ayrshires.
Turner, A. S. & Sons, Ryckman's Corners. . Ayrshires.
Tweedie, Robert, Whitevale ..... Ayrshires.
Van Norman, John, Rockwood .....
Van Patter, J. M., Aylmer. ..... Holstein-Friesians.
Varcoe, John, Carlow. ..... Aberdeen-Angus.
Wagler, C. Baden, ... Holstein-Friesians.
Wallace, J. Alex., Simcoe. ..... Holstein-Friesians.
Wallace, Oswald, Burgessville. ..... Holstein-Friesians.
Walker, A. S., Dobbinton. ..... Grades.
Walker, A. T., Beaconsfield. ..... Holstein-Friesians.
Walker, Chas. E., Norwich. ..... Holstein-Friesians.
Walker, Wm., Ashford, Sask. ..... Holstein-Friesians.
Walker, Wm. J., Winchester. ..... Ayrshires.
Walter, Herbert, South Mountain. ..... Ayrshires.
Ward, R. G., Springvale. ..... Holstein-Friesians.
Wardell, W. E., Middlemarch. ..... Holstein-Friesians.
Waring, J. E., Newark. ..... Holstein-Friesians.
Warnica, Asa, Painswick. ..... Herefords.
Watson, Arthur, Middlemarch. ..... Holstein-Friesians.
Watson, T. & J., Pro Station. ..... Herefords.
Watson, W. R., M.D., Burlington. ..... Holstein-Friesians.
Watson, Wm., Hammond ..... Ayrshires.
Watt, Alex., Lancaster ..... Ayrshires.
Weaver, Roy H., Norwich. ..... Holstein-Friesians.
Webster, H. O., Bowell. ..... Ayrshires.
Welsh, Henry, Weston. ..... Holstein-Friesians.
White, Homer, Bloomfield ..... Ayrshires.
White, Peter, Pembroke. ..... Shorthorns.
White, Wm. A., Oakdale. ..... Herefords.
Whitteker, H. J., & Sons, Williamsburg. .... Ayrshires.
Wilson, David, Lakehurst. ..... Ayrshires.
Wilson, E. P., Waterford. ..... Holstein-Friesians.
Wilson, O. M., Springford. ..... Holstein-Friesians.
Willis, R., Aylmer. ..... Holstein-Friesians.
Wood, Tig. Mitchell. ..... Holstein-Friesians.
Wooddissee Bros., Rothsay. ..... Ayrshires.
Woodley, Elmer V., Waterford. ..... Holstein-Friesians.
Woodley, Fred V., Boston. ..... Holstein-Friesians.
Woodley, Geo. L., Villa Nova ..... Holstein-Friesians.
Woods, John G., New Hamburg. ..... Holstein-Friesians.
Woodwark, John & Son, Wheeler. ..... Herefords.
Wooley, D. Mc.F., Simcoe. ..... Ayrshires.
Wright, Dan., Ponsonby. .....
Wyckoff, D. J., Newark. ..... Holstein-Friesians.
Wyckoff, I. G., Tyrell. ..... Holstein-Friesians.
Yarington, T. C., Princeton. ..... Holstein-Friesians.
Yates, Mahlon, Athens. ..... Ayrshires.
Yates, Phillip, Athens. ..... Ayrshires.
Youmans, Hayes, Tyrell. ..... Holstein-Friesians.
Yuill, A. C., Carleton Place ..... Ayrshires.
Zoeller, A. M., New Hamburg. ..... Holstein-Friesians.

DOMINION SHEEP BREEDERS' ASSOCIATION, 1910-11.

Adamson, Lawrence, Strathcona, Alta. ... Shrophires.
Allan, George, Burford .....
Allard, M. Laurence, Que. ..... Leicesters.
Allen, George, Paris ..... Cotswolds.
Allison, George, Burbank, Man. ..... Leicesters.
Andrews, George. Millfield, Que. ..... Leicesters.
Arkell & Son, Henry, Arkell. ..... Oxfords.
Arkell & Sons, Peter, Teeswater ..... Oxfords.
Armstrong, Geo. B., Teeswater ..... Leicesters.
Armstrong, James, Shawville, Que. ..... Oxfords.
Arthur, Fred A., Knowlton, Que. ..... Leicesters.
Bailey, A. D., Skowhegan, Mich. ..... Suffolks.
Bailey, H. C., Cookshire, Que. ..... Shropshires.
Baker, Ed., Winchester ..... Leicesters.

DOMINION SHEEP BREEDERS' ASSOCIATION, 1910-11.—*Continued.*

Name and Address.	Breed.
Baker, George, Simcoe	Southdowns.
Baker & Sons, J. E., Barronsfield, N.S.	Oxfords.
Baldwin, H. E., Coaticook, Que.	Leicesters.
Balfour, John, Bannerman, Man.	Shropshires.
Barbour, E., Erin	
Barker, J. B., Mount Vernon	Cotswolds.
Barr, P. A., Irondale	Shropshires.
Baxter, Ernest N., Georgetown, Que.	Leicesters.
Beattie, W. H., Wilton Grove	Shropshires.
Bell, J. J., Islay, Alta.	Suffolks.
Bell, Robert, Hurondale	Leicesters.
Bellemare, Adrien, Yamachiche, Que.	Leicesters.
Bellerose, Dephis, Ste. Elizabeth, Que.	Cotswolds.
Benham, Jos., Everton	
Bergerson, Arthur, St. Pie, Que.	Leicesters.
Bertrand, Benjamin, St. Hermas, Que.	Shropshires.
Besner, A. H., Pont Chateau, Que.	Shropshires.
Black, H. C., Thornton	Shropshires.
Blackburn, Thos. M., Kettleby	Shropshires.
Blain, Jas. R., Loring	Shropshires.
Boswell, Geo. L., French Fort, P.E.I.	Shropshires.
Bourassa, Theo., Yamachiche, Que.	Leicesters.
Boutet, Jos., Victoriaville, Que.	Leicesters.
Bowlby, Frank, Simcoe	Cotswolds.
Bowman, James, Guelph.	Suffolks & Dorsets.
Bradley, G. R., Carsonby	
Bradshaw, Geo. W., Morden, Man.	Shropshires.
Bray, Jas., Portage la Prairie, Man.	Oxfords.
Bredt, P. M., Regina, Sask.	
Brien & Son, E., Ridgetown	Cotswolds.
Brisson, Teeffle, Warwick, Que.	Leicesters.
Brown & Son, A., Beachburg	Oxfords.
Brown, David, St. Joachim de Montmorency, Que.	Leicesters.
Brown, Dick, Calgary, Alta.	Shropshires.
Brown, O. E., Calgary, Alta.	Shropshires.
Bryant, W. A., Cairngorm	Oxfords.
Bryson, Jas., Brysonville, Que.	Leicesters.
Byers, M. W., Hampton	Shropshires.
Cameron, Hugh, Sissiboo Falls, N.S.	Shropshires.
Campbell, John, Woodville	Shropshires.
Campbell & Son, J. H., Jericho	Cotswolds.
Campbell, Julien, Stanbridge Station, Que.	Leicesters.
Campbell, P. M., Balderson	Oxfords.
Carter, T. E., Bathurst, N.B.	Leicesters.
Central Experimental Farm, Ottawa	Shropshires & Dorsets.
Cerswell, J. A., Bond Head	Oxfords.
Chandler, H. B., Southey, Sask.	Shropshires.
Chartier, Albert, St. Paul l'Ermite, Que.	Oxfords.
Christie, Peter, Manchester	Shropshires.
Clark, L. G., 4th Line, Alton	Shropshires.
Cleghorn, J. G., Hillburn, Sask.	
Cleland, Jas. R., Genoa, Que.	Leicesters & Oxfords.
Clement, Jas., St. Esprit, Que.	
Cloutier, Narcissi, Three Rivers, Que.	Leicesters.
Cloutier, Jos., Riviere aux Chiens, Que.	Leicesters.
Cooper & Nephews, Toronto	Southdowns & Shropshires.
Copp, T. H., Baie Verte, N.B.	Shropshires.
Cossar, G. C., Gagestown, N.B.	Leicesters.
Cote, C., Baie St. Paul, Que.	Leicesters.
Cote, Hylas, St. Hugues, Que.	Cotswolds.
Cote, R., L'Ange Gardien, Que.	
Cote, Samuel, Rimouski, Que.	Leicesters.
Cousins & Son, J., Harriston	Oxfords.
Coutie, Pierre, St. Felix de Valois, Que.	Cotswolds.
Couture, Freres, St. Augustine, Que.	Leicesters.
Couture, Jos., Indian Lorette, Que.	
Couture, J. A., Quebec, Que.	
Couture, Henry, St. Augustine, Que.	Leicesters.
Cowieson, J. B., Queensville	
Creighton, Robert, Genoa, Que.	Leicesters.
Crews, W. H., Trenton	
Crozier, A., Beachburg	Leicesters.
Daignault, N., St. Thomas d'Aguin, Que.	Cotswolds.
Dansereau, Alphonse, Vercheres, Que.	Leicesters.
Davis, John & Son, Taunton	Shropshires.
Davidson, Joseph, Flagstaff, Alta.	Leicesters.

Dawson, J. F., Odessa ..... Shropshires.
Dean, Geo. K., Shelbyville, Mich. ..... Suffolks.
Denis, Arsene, St. Norbert Sta., Que. ..... Lincolns, Shropshires, Cotswolds & Leicesters.
Dennis, E., Newmarket ..... Oxfords.
Descoteaux, J. F., Ste. Monique, Que. ..... Shropshires.
Dillon, Jacob, Ellisville ..... Shropshires.
Donkin, Chas. A., Vittoria .....
Dorrance, Jas., Seaforth ..... Leicesters.
Douglas, James, Caledonia ..... Leicesters.
Douglas, R. J., Galt .....
Drew, Jas. A., Beech Ridge, Que. ..... Leicesters.
Drummond, Sir George (Estate), Beaconsfield, Que. ..... Southdowns.
Dunnett Bros., Lythmore ..... Leicesters.
Dupre, Wilfred, Vercheres, Que. ..... Leicesters.
Easton, Abram, Appleby ..... Leicesters.
Easton, R. & W., Paris .....
Edwards, Geo. B., Covey Hill, Que. ..... Leicesters.
Evans, D. & Son, Somenos, B.C. ..... Southdowns.
Fisher, Hon. Sydney, Ottawa ..... Shropshires.
Fontaine, Francois, Notre Dame de Stanbridge, Que. ..... Leicesters.
Forster, A. S., Oakville ..... Dorsets.
Fortier, Paul, St. Pierre Bantiste, Que. ..... Leicesters.
Fortin, Jos. C., Baie St. Paul, Que. ..... Leicesters.
Foster Farm, Oakville ..... Dorsets.
Fournier, Auguste, St. Philemon, Que. ..... Leicesters.
Frank, R. W., Kingsbury, Que. ..... Leicesters.
Frechette, Jos., St. Felix de Valois, Que. ..... Cotswolds.
Gagnon, Thimotie, St. Arsene, Que. ..... Leicesters.
Gamley, A. D., Griswold, Man. ..... Leicesters.
Garceau, Gideon, Point du Lac, Que. ..... Leicesters.
Garceau, G., Three Rivers, Que. .....
Gardhouse, J. M., Weston. ..... Leicesters.
Gardhouse & Sons John, Highfield ..... Leicesters.
Gaucher, Aliv., St. Damase, Que. ..... Cotswolds.
Genest, Johnny, Victoriaville, Que. ..... Leicesters.
Gibson, J. T., Denfield ..... Lincolns.
Gilroy, John H., Coe Hill ..... Cotswolds.
Gilroy, Joshua, Lyn ..... Oxfords.
Gladu, Hormidas, St. Brigide d'Iberville, Que. ..... Leicesters.
Glaister Bros., Crosshill ..... Leicesters.
Glass, James, Roxham, Que. ..... Leicesters.
Glass, John W., Roxham, Que. .....
Goff, Arthur, Leeds Village, Que. ..... Leicesters.
Goodall, Wm., St. Louis de Gonzague, Que. .. Leicesters.
Gosnell, John S., Ridgetown. .....
Gouin, Aime, St. Norbert d'Arthabaska, Que. Leicesters.
Gourley, Jas., Carp. ..... Cotswolds.
Government of Quebec, Quebec, Que. .....
Graham, D. A., Wanstead ..... Lincolns.
Graham, H. R., Huntingdon, Que. ..... Leicesters.
Green, Chas. G., South Bolton, Que. ..... Leicesters.
Hadwen, G. H., Duncan's, B.C. ..... Shropshires.
Hall, J. W., Bensfort ..... Leicesters.
Hall, Thos., Bradford ..... Shropshires.
Hamilton, C. W., Spanish ..... Shropshires.
Hanmer & Hodgson, Brantford .....
Harding, R. H., Thorndale ..... Dorsets.
Harman, K. E., Pulaski, Va. ..... Suffolks.
Hastings Bros., Crosshill ..... Leicesters.
Henderson, David, Amberly ..... Shropshires.
Heslop, Arthur, Appleby ..... Leicesters.
Hetic, Awildas, St. Sulpice, Que. ..... Oxfords.
Hindmarsh, Geo., Ailsa Craig ..... Shropshires.
Hine, R. J., St. Mary's ..... Oxfords.
Hornal, Jos., Muirkirk ..... Lincolns.
Hunter, John, Alma ..... Leicesters.
Ingram, Thos., Manitowaning ..... Cotswolds.
Innes, Donald, Tobique River, N.B. ..... Cotswolds.
Irving, A., Scotstown, Que. ..... Leicesters.
Jackson, Austin, Mineral Springs, N.Y. ..... Suffolks.
Jackson, John, Abingdon ..... Southdowns.
Jacques Bros., Lamerton, Alta. ..... Suffolks.
Jacques Bros., Ingleton, Alta. .....
Jasper, T., Harding, Man. ..... Leicesters.
Jennings, C., Sheenboro, Que. ..... Oxfords.
Johnston Bros., Underwood ..... Leicesters.
Johnston, W. F., Uxbridge ..... Cotswolds.
Johnston, Peter, Inverness, Que. ..... Leicesters.
Joynt, Simeral, Merrickville ..... Leicesters.
Jull, M. A., Victoria, B.C. .....
Juneau, F. X., Ste. Ursule, Que. ..... Shropshires.
Kelly, John, Shakespeare .....

DOMINION SHEEP BREEDERS' ASSOCIATION, 1910-11.—*Continued.*

Name and Address.	Breed.
Kelsey, J. L., Woodville	Shropshires.
Kerr, Robert, Riversfield, Que.	Dorsets & Oxfords.
King, John H., Smith's Creek, N.B.	Shropshires.
Kirk, P. J., N. Sutton, Que.	Shropshires.
Lachapelle, Edouard, St. Paul l'Ermite, Que.	Leicesters.
Lachapelle, Edmond, St. Paul l'Ermite, Que.	Cotswolds.
Lachapelle, Napoleon, St. Paul l'Ermite, Que.	Leicesters.
Lafontaine, Edouard, Plessisville, Que.	Leicesters.
Laing, Adolphe, St. Leon, Que.	
Laird, Geo. H., Guelph	Cotswolds.
Lamarche, Ismail, St. Esprit, Que.	Leicesters.
Lang, Benno, Trout Creek	Lincolns.
Lang, John, Cairnside, Que.	Leicesters.
Levallee, Louis, St. Guillaume, Que.	Cotswolds.
Lavallee, Paul, Bertherville, Que.	
Lavallee, Pierre, St. Norbert, Que.	Cotswolds & Lincolns.
Lawrie, John, Malvern	Oxfords.
Law, Wm. & Sons, Ringwood	Shropshires.
Lebel, Geo., French Village, Que.	Leicesters.
Leclerc, Jos., St. Charles de Bellechase, Que.	Leicesters.
Lee, J. W. & Son, Simcoe	Oxfords.
Lee, J. W. & Sons, Highgate	
Legris, Ulderic, St. Leon, Que.	Shropshires.
Letourneau, Eudore, Ste. Famille, Que.	Leicesters.
Letourneau, Paul Mike, Ste. Famille d'Orleans, Que.	
Levert, Napoleon, Cote St. Vincent, Que.	Leicesters.
Limoges, Rodique, Terrebonne, Que.	Cotswolds.
Lloyd-Jones, J., Burford	Shropshires.
Lloyd-Jones, T. & J., Burford	
Loiselle, Jos., St. Marc, Que.	Cotswolds.
Loiselle, Ovide, St. Marc, Que.	
Love, H. W., Irma, Alta.	
Luxton, A. G. H., Mount Forest	Dorsets.
Lupien, E. E., Louisville, Que.	Leicesters.
Lupien, L. E., Louisville, Que.	Lincolns.
Lyons, S. J., Norval	Cotswolds.
Mackay, A. J., Macdonald, Man.	Leicesters.
Manseau, Freres, Nicolet, Que.	Leicesters.
Martin, C. E., Grand Pre, Que.	Shropsbires.
Martin, E. E., Canning	Berkshires.
Mayhew, Orian, Canterbury, Que.	Leicesters.
Maynard, J. T., Chilliwack, B.C.	Dorsets.
Metairie, St. Joseph, St. Hyacinthe, Que.	Leicesters.
Miller, J. E., Greenbush	Oxfords.
Miller, John, Jr., Ashburn.	Shropshires & Cotswolds
Miller, Robert, Stouffville	Shropshires & Cotswolds
Milne, R. & Son, Green River	Shropshires.
Milot, Hercule, Yamachiche, Que.	Oxfords.
Milot, Honore, Yamachiche, Que.	Cotswolds, Shropshires & Oxfords.
Mitchell, John, Glencoe	Lincolns.
Mode, Russell, Vankleek Hill	Shropshires.
Monkman, W. D., Bond Head	Shropshires.
Morden, H. N., Barrie Island	Oxfords.
Morgan, E. H., Stanbridge, Que.	Shropshires.
Morgan, L. E., Milliken	Cotswolds.
Morin, Horace, St. Hyacinthe, Que.	Cotswolds.
Morrin, D. T., Lachute, Que.	Leicesters.
Murdock, F., Greenway, Man.	Shropshires.
MacDonald College, Macdonald College, Que.	Shropshires.
McAlister, W. E., Durham	Leicesters.
McCaig, D. S., Lethbridge, Alta.	Shropshires.
McCrae, D., Guelph	Southdowns & Cotswolds.
McDiarmid, Richard, Covey Hill, Que.	Leicesters.
McDonald, R. L., Cranbrook	Leicesters.
McDonald, Roderick, Manitowaning	Cotswolds.
McEwen, Col. R., Byron	Southdowns.
McFarlane, John, Clinton	Shropshires.
McKenzie, D., Hyde Park	Shropshires.
McKillican, W. E., St. Elmo	Leicesters.
McLean, A. B., Foam Lake, Sask.	Oxfords.
McLean, John G., Beechburg, Que.	Oxfords.
McNelly, Hugh, Arkell	Cotswolds.
McPhee, D. A., Vankleek Hill	Oxfords.
McQuade, Geo. A., Omemee	Shropshires.
McRoble, Fred, Haddo	Leicesters.

McSweyn, Duncan, McCrimmon .....Oxfords.
Nash, Thos., Gladys, Alta. .....Shropshires.
Nelson, I. E., Fulton .....Oxfords.
Ness, R. R., Howiek, Que. .....Leicesters.
Nichols, W., Staynersville, Que. .....Shropshires.
Noiseaux, Frederic, St. Cedaire, Que. .....Leicesters.
Nunn, Cephas, Winslow .....Southdowns.
Ontario Agricultural College, Guelph .....
Orr, John, Galt .....
Oughtred, J. W., Marbleton, Que. .....Hampshires.
Oumit, Clovis, Terrebonne, Que. .....Cotswolds.
Ouimet, Clovis, Ste. Francois de Salles, Que.Lincolns.
Page, T. W., Bolten Glen, Que. .....Leicesters.
Parker, J. H. M., Lennoxville, Que. .....Leicesters.
Parkinson, L., Guelph. .....Lincolns.
Parnell, I. J., Springroad, Que. .....Leicesters.
Parnell, W. J., Lennoxville, Que. .....Leicesters.
Partridge, A. W., Barrie .....Leicesters.
Paquet, Theodule, St. Nicholas, Que. .....
Pelletier, G. A., St. Roch des Aulnaies, Que..Leicesters.
Pepin, Ludger, St. Norbert, Que. .....Leicesters.
Perreault, Camille, Joliette, Que. .....Cotswolds.
Perreault, T., St. Esprit, Que. .....Cotswolds.
Pichette, Donat, St. Lin, Que. .....Cotswolds.
Pierce, Wm., Brinsley .....
Pilbus, John H., Knowlton, Que. .....Leicesters.
Pope, E. B., Compton, Que. .....Shropshires.
Potter, A. B., Kennedy, Alta. .....Leicesters.
Price, J. E., Mountain Grove .....Oxfords.
Proulx, Pierre, St. Hughes, Que. .....Shropshires.
Purcell, John, Huntingdon, Que. .....Leicesters.
Quain, John, Reedsdale, Que. .....Leicesters.
Quest, J., Hallerton, Que. .....Cotswolds.
Quest, W., Hallerton, Que. .....Cotswolds.
Rawlings, J., Forest .....
Rivert, Napoleon, St. Liguori, Que. .....Oxfords.
Rivet, Ovila, St. Esprit, Que. .....Leicesters.
Robertson, Jas. & Sons, Milton .....Dorsets.
Robertson, J. F., Mount Forest .....Dorsets.
Robinson, Lyndhurst, C., Odelltown, Que. ..Cotswolds.
Robson, T. A., Frontier, Que. .....Leicesters & Cotswolds.
Ross, John, Kinnear's Mills, Que. .....Leicesters.
Rosevear, E. A., Roseneath .....Dorsets.

Rudell, A., Hespeler. .....Shropshires.
Rushton, I. J., Rocanville, Sask. .....
Rutherford, R. H., Glen Morris .....
Salus, Athanese, St. Bonaventure, Que.....
School of Agriculture, La Trappe, Que.....Shropshires.
Seminiare de Chicoutmi, Chicoutmi, Que....
Seminiare de Quebec, Quebec, Que.....Leicesters.
Setter, Wm., Russell, Man. .....Leicesters.
Shatford, J. M., La Riviere, Man. .....Cotswolds.
Shuttleworth, W. T., Gaetz Valley, Alta. ....Shropshires.
Sigfussion, John, Clarkleigh, Man. .....Oxfords.
Silver, H. G., Danville, Que. .....Leicesters.
Simand, Geo. A., Montreal, Que. .....
Skinner, F. T., Indian Head, Sask. .....Shropshires.
Slater, John, North Georgetown, Que. .....
Smith, A. W., M.P., Maple Lodge. .....Leicesters.
Smith, C. M., Lacombe, Alta. .....Oxfords & Leicesters.
Smith, Wm., Columbus. .....Cotswolds.
Snaden, Miss Annie E., Danville, Que. .....Leicesters.
Snell, James, Clinton .....Leicesters.
Snell, J. V., Snellgrove .....
Snobelan, J. B., Blenheim .....Oxfords.
Sockett, John, Rockwood .....Cotswolds.
Sporle, W., Jr., Edmonton, Alta. .....Shropshires.
Stewart, Alex., Living Springs .....Oxfords.
Strachan, John, Pope, Man. .....
Streatfield, Geoffrey, Emsdale .....Oxfords.
Strong, W. C., North Sutton, Que. .....Leicesters.
Sutherland, W. C., Saskatoon, Sask. .....Shropshires.
Sutton, Mark., Ospringe. .....Leicesters.
Sylvester, L. P., St. Theodore d'Acton, Que..Lincolns.
Sylvestre, Paul, Clairvoux, Que. .....Shropshires & Lincolns.
Sylvestre, Pierre, Clairvoux. .....
Sylvestre, Victor, Clairvoux, Que. .....Hampshires.
Talbot, Evaniste, St. Norbert, Que. .....Leicesters.
Talbot, George, St. Norbert, Que. .....
Tarte, Gregoire, St. Sabine, Que. .....Leicesters.
Taylor, John S., St. Eugene, Que. .....Leicesters.
Telfer Bros., Paris .....Southdowns.
Tessier, Herman, St. Majoric, Que. .....Shropshires.
Therin, Francois, St. Norbert, Que. .....Leicesters.
Thompson, A., Allan's Corners, Que. .....Leicesters.
Thompson, Jos., Chilliwack, B.C. .....Suffolks.

DOMINION SHEEP BREEDERS' ASSOCIATION, 1910-1911.—*Concluded.*

Name and Address.	Breed.
Thomson, Adam, Shakespeare	
Thouin, Louis, Repentigny, Que.	
Titus, A. A., Napinka, Man.	Shropshires.
Trottier, Jos., St. Norbert, Que.	
Trudel, Theophile, St. Prosper, Que.	
Turenne, Dephis, St. Paul l'Ermite, Que.	Leicesters.
Turner, John A., Calgary, Alta.	Shropshires.
Underhill, James, Claremont	Shropshires & Cotswolds
Vance, Robert & Son, Ida	Cotswolds.
Vasseur, V., St. Pie, Que.	Shropshires.
Waddell, C., Covey Hill, Que.	Leicesters.
Walker, Andrew, Lachute, Que.	Leicesters.
Wallace, John H., Renfrew, Ont.	Shropshires.
Wallace, W. A., Kars	Shropshires.
Watson, John J., Geneva	Shropshires.
Weir Bros., Milton	Oxfords.
Westington & Leon, Plainville	Leicesters.
Whitelaw, A. & W., Guelph.	Leicesters.
Whittaker, H. J., & Sons, Williamsburg	Oxfords.
Williams, H. E., Knowlton, Que.	Shropshires.
Wilson, J. & A., Hornby	Hampshires.
Wilson, P. H., Sardis, B.C.	Shropshires.
Winny, R. H., Nicola, B.C.	Shropshires.
Wright, W. E., Glanworth	Shropshires.
Wood, C. & E., Freeman	Leicesters.
Woodburn, Mrs. R. F., Lisgar, Que.	Leicesters.
Wood, Wm., Palermo	Leicesters.
Zachary, Thos., Austin, Man.	Leicesters.

DOMINION SWINE BREEDERS' ASSOCIATION, 1910-1911.

Abbott, Thos., Souris, Man.	Berkshires.
Abra, Moses, Blair	Yorkshires.
Adair, T. H., Stettler, Alta.	Berkshires.
Adams, H. A., Newcastle	Yorkshires.
Agricultural Circle, Coteau du Lac, Que.	Chester Whites.
Agricultural College, Truro, N.S.	Yorkshires.
Allen, Wellington, Cassburn	Chester Whites.
Allison, David, Roland, Man.	Berkshires.
Amphlett, Capt. T. E. Alix, Alta.	Berkshires.
Anderson, W., Tillsonburg	Chester Whites.
Arcand, C., Iberville Jct., Que.	Poland Chinas.
Ash, Wm. R., North Ridge	Poland Chinas.
Baker, C. W., Ft. Saskatchewan, Alta.	Yorkshires.
Baldons, R., Lorlie, Sask.	Yorkshires.
Baldwin, C., Emerson, Man.,	Yorkshires.
Bansfield, J., McGregor, Man.	Yorkshires.
Barker, W. S., Deloraine, Man.	Yorkshires & Berkshires
Barker & Evans, Agassiz, B. C.,	Yorkshires.
Bassett, W. G., Asquith, Sask.	Berkshires.
Bates, Norman W., Gilbert Plains, Man.	Duroc Jerseys.
Bates, Geo. H., Gilbert Plains, Man.	Duroc Jerseys.
Beaudoin, Leandre, St. Alexander, Que.	Yorkshires.
Beauregard, Horace, St. Damase, Que.	Chester Whites.
Beckley, Wm., Red Deer, Alta.	Berkshires.
Beckstead, G. A., Morrisburg.	Berkshires.
Bell, J. J., Islay, Alta.	Yorkshires.
Bedlow, John, Brockville.	Berkshires.
Benfield, H. G., Woodstock	
Bennett, F. G., Canterbury, Que.	Berkshires.
Bennett, George, Charing Cross.	Chester Whites.
Bennett, Joseph, Buxton.	Poland Chinas.
Benson, Stephen, Neepawa, Man.	Yorkshires.
Berg, J. H., Wetaskiwin, Alta.	Berkshires.
Bergevin, Eustache, Ste. Martine, Que.	Berkshires.
Best, H. C., Strathmore, Alta.	
Birch, R., Anderson.	Yorkshires.
Bissett, Jas., Roseland, Man.	Berkshires.
Blackburn, Will, Riviere Mailloux, Que.	Yorkshires
Blackmore, Robert, Mozart, Sask.	Yorkshires.
Blanchard, Etienne, St. Marc, Que.	
Bogart, L. F., Gosport.	Yorkshires.
Boutet, Jos., Victoriaville, Que.	Chester Whites.
Bourassa, M., St. Barnabe, Que.	
Bousefield, J., McGregor, Man.	

Bowman, T. E., High River, Alta. .....Berkshires.
Boyle, J. W., Woodstock .....Yorkshires.
Boynton, Wm., Dollar. .....
Bradley, R. J., Beech Ridge, Que. .....Berkshires.
Braid, W., Oak River, Man. .....Berkshires.
Brain, A. M., Hornby. .....Yorkshires.
Brandow, J. L., Walsingham Centre .....Yorkshires.
Bray, James, Portage la Prairie, Man. ....Berkshires.
Brayshay, Wm. H., Kelloe, Man. .....Berkshires.
Brechton, Geoffrey, Myrtle .....
Brethour, J. E. & Nephews, Burford. .....Yorkshires.
Brien, E. & Sons, Ridgetown. .....Berkshires.
Brodie, D. C., Burwell Road. .....Yorkshires.
Brodie, Peter, Little York, P. E. I. .....Berkshires.
Brooks, J. D., Plum Coulee, Man. .....Poland Chinas.
Browne Bros., Ellishoro, Sask. .....Berkshires.
Brown, F. W., Portage la Prairie, Man. ....Yorkshires.
Brown, H., Holley. .....Yorkshires.
Brown, John C., Stamford. .....Tamworths.
Brownridge, Wm. W., Ashgrove. .....Yorkshires.
Buchanan, W., Ravenna .....Yorkshires.
Buck, Herman A., Sydenham .....Hampshires.
Bull, B. H. & Son, Brampton. .....
Bulstrade, C G., South Qu'Appelle, Sask. ..Berkshires.
Burr, Jas. F., Annan. ... .Berkshires.
Caldwell, F. E., Manotick .....Chester Whites.
Callbeck, J. W., Summerside, P.E.I. .....Yorkshires.
Campbell, George, Killarney, Man. .....Tamworths.
Campbell, Mac, & Sons, Northwood. .....Duroc Jerseys.
Campbell, Robert, Roseneath. .....Yorkshires.
Capes, Henry, Kertch. .....Chester Whites.
Carswell, E., Penhold, Alta. .....Yorkshires.
Carter, T. Edwin, Bathurst, N.B. .....Chester Whites.
Caswell, Jos., Saskatoon, Sask. .....Tamworths.
Cathro, F. R., R. R. 4, Calgary, Alta. .....Yorkshires.
Cation, W. J., Snelgrove. .....
Cauchon, Chas., Chateau Richer, Que. .....Yorkshires.
Caulfield, F. St. G., Kingston Station, N.S. ..Berkshires.
Central Experimental Farm, Ottawa. .....Yorkshires.
Carswell, J. A., Bondhead .....Yorkshires.
Chaddock, E. N., Cookshire, Que. .....Yorkshires.
Chapman, F. M., Dundas. .....Yorkshires.
Choate, E. T., Brampton. .....Berkshires.

Churchill, W. A., Lakeside, N.S. .....Yorkshires.
Clark, H. G., Georgetown. .....
Clark, J. L., Norval Station. .....
Clark, J. K., Reid's Mills. .....Berkshires.
Clifton, J. G., Folden's .....Berkshires & Yorks.
Cloughley, M., Webbwood. .....Yorkshires.
Clow, W. H., Brockville. .....
Cogswell, Walter S., Centreville, N.B. ....Chester Whites.
Cole, T. J., Bowmanville. .....Yorkshires.
Coleman, H. D., Killarney, Man. .....Yorkshires.
College Assomption, L'Assomption, Que. ....Yorkshires.
College de St. Laurent, St. Laurent, Que. ..Yorkshires.
Colley, F. L., Stettler, Alta. .....Berkshires.
Collins, P. O., Bowesville. .....Yorkshires.
Colvin, Jas. A., Sedgwick, Alta. .....Berkshires.
Colwill, A. A., Newcastle .....Tamworths.
Cook, W. M., Pope, Little, York, P. E. I. ..Yorkshires.
Copeland, H., Hubrey. .....Chester Whites.
Corbin, Oscar, St. Esprit, Que. .....Yorkshires.
Corning, J. C., Chegoggin, N.S. .....Yorkshires.
Cote, Hildare, St. Philemone, Que. .....Chester Whites.
Coulthard, E., Limbeg, Sask. .....Berkshires.
Corcoran, E. P., Warden, Que. .....Berkshires.
Court, Leonard, Donaldson, P.E.I. .....Chester Whites.
Cousins & Son, John, Harriston. .....Yorkshires.
Couture, Jos., Lorette, Que. .....Yorkshires.
Cowan, J. S., Donegal .....Berkshires.
Cowieson, J. B., Queensville. .....Berkshires.
Cox, T. A., Brantford. .....Berkshires & Yorks.
Creighton, J. C., Hawley. .....Tamworths.
Crichton, A., Paris. .....Tamworths.
Crockett, George, York, P.E.I. .....Berkshires.
Crowell, W. N., Napinka, Man. .....Berkshires.
Cunningham, J., Norval. .....
Currie, C., Morriston. .....Tamworths.
Curry, Hugh & Son, Ingleton, Alta. .....Berkshires.
Curry, Wm., South Qu'Appelle, Sask. .....Berkshires.
Curtis, A. E., Stanstead, Que. .....Chester Whites.
Dalglish, K. G., Ferry Bank, Alta. .....Berkshires.
Darling, Adam N., Box 41, Mildmay. .....Yorkshires.
Dauphin, Alphonse, St. Norbert, Que. .....Yorkshires.
Davidson, A. F., Gorrie. .....Berkshires.
Davidson, W. T. & Son, Meadowvale. .....Tamworths.

DOMINION SWINE BREEDERS' ASSOCIATION, 1910-1911.—*Continued.*

Name and Address.	Breed.
Davis, H. J., Woodstock.	Berkshires.
Dawson, Donald, Kirkton.	Berkshires.
DeCourcey, D., Bornholm.	Chester Whites.
Dedels, H., Breslau.	Yorkshires.
DeLisle, G., Lloydminster, Sask.	Yorkshires.
Delong, A. M., Francis, Sask.	Yorkshires.
Denis, Arsene, St. Norbert, Que.	Yorkshires.
Denison, W. S., Denison's Mills, Que.	Chester Whites.
Derbyshire, C. J. Wheatley.	Duroc Jerseys.
DePass, F., Strome, Alta.	Yorkshires.
Descoteaux, J. F., St. Monique, Que.	Berkshires.
Desgagnes, Odelon, Ile Aux Choudres, Que.	Yorkshires.
Desrosiers, Jos., St. Felix de Valois, Que.	Yorkshires.
Devlin, E. A., Grenfell, Sask.	Yorkshires.
Diehl, Wm., Moon Hills, Sask.	Berkshires.
Disney, W. F., Greenwood.	Yorkshires.
Dolson, H. A., Alloa.	Berkshires.
Dolson, Samuel, Norval Station.	Berkshires.
Dolson, W. J., Norval Station.	
Donaldson, Jas., Dewittville, Que.	Chester Whites.
Douglas, D. & Son, Mitchell.	Tamworths.
Drury, Jas. S., Staughton, Sask.	Yorkshires.
Dubois, Albert, La Bataille, Que.	Yorkshires.
Dubs, Geo. A., Rodney.	Berkshires.
Duck, John, Port Credit	Yorkshires.
Duck, R. F. & Sons, Port Credit	Yorkshires.
Dunlop, Wm., McDonald's Corners.	Chester Whites.
Durham, W. H., Toronto,	Yorkshires.
Duthie, Jas., Hartney, Man.	Berkshires.
Dynes, A., Ottawa.	Yorkshires.
Edwards, Chas., Onondaga.	Berkshires.
Edwards, W. V., Souris, Man.	Berkshires.
Ego, R. J. Jarratt.	Yorkshires.
English, A. G., Harding, Man.	Yorkshires.
English, W. H., Harding, Man.	Berkshires.
Enke, Max., Galiano Island, B.C.	Berkshires.
Ellenton, J. G., Hornby.	Berkshires.
Elliott Bros., Wawanessa, Man.	Yorkshires.
Erbe, Wm. A., Sussex, N.B.	Chester Whites
Esdon, Jas. H., Bainsville.	Berkshires.
Evans, George, Stamford.	
Ewens, Jas. M., Bethany, Man.	Berkshires.
Fallis, John A., Redvers, Sask.	Yorkshires.
Farough, Nicholas, Maidstone.	Duroc Jerseys.
Fawcett, W. H., Oxbow, Sask.	
Featherston, Jos. & Son, Streetsville.	Yorkshires.
Feeley, M. H., Buchanan, Sask.	Berkshires.
Ferguson, C. T., Marshfield., P.E.I.	Yorkshires.
Ferguson, J. B., St. Catharines.	Chester Whites.
Field, W. H. & J. O., Vanessa.	Berkshires.
File, A. J., Amellasburg.	Yorkshires.
Finlayson, Geo., Armstown, Que.	Yorkshires.
Flatt, D. C. & Son, Millgrove.	Yorkshires.
Flatt, John, Millgrove.	
Forget, R., Baie St. Paul, Que.	Yorkshires.
Forth, D. J., Glen Buell.	Yorkshires.
Fortin, Francis, Adamsville, Que.	
Fortin, Samuel, St. Philemou, Que.	Yorkshires.
Fortier, Paul, St. Pierre Baptiste, Que.	Yorkshires.
Foster, A. H., Twin Elm.	Yorkshires.
Fox, Nelson, Gordon.	Hampshires.
Fraleigh, H., Forest	Berkshires.
Frazer, J. A., Portage la Prairie, Man.	Berkshires.
Fremlin, D., Bar River	Yorkshires.
Garbutt, R. J., Belleville.	Yorkshires.
Gareau, J. J., St. Roch l'Achigan, Que.	Yorkshires.
Gardner, Fred, Mitchell.	Hampshires.
Gaucher, Alex., St. Damase, Que.	Chester Whites.
Gavin, L. P., Mallorytown.	Yorkshires.
George, E. D., Putnam.	Chester Whites.
George, H. E., Crampton.	Chester Whites.
German, Herbert, St. George	Tamworths.
Gibson, D. J., Newcastle	Tamworths.
Gibson, Wm. J., Marshfield, P.E.I.	Tamworths.
Giffin, A. & J. H., Lethbridge, Alta.	Berkshires.
Gillaland, W. J., Jericho.	Berkshires.
Gilmour, T. W., Rosemere, Que.	Chester Whites.
Gladu, Jos., Mt. Johnson, Que.	Chester Whites.

Glen Bros., Didsbury, Alta. ..... Yorkshires.
Golley, Wm., Edmonton, Alta. ..... Yorkshires.
Goodliffe, S. J., Sussex, N.B. ..... Yorkshires.
Goslin, R. J. & Sons, Essex. ..... Poland Chinas.
Gouin, P. A., Three Rivers, Que. ..... Tamworths.
Gould, Geo. G., Edgar Mills. ..... Poland Chinas.
Gourlay, James, Carp. .....
Graham, C. H., Udora. ..... Yorkshires.
Gratton, Jos. Jr., Ste. Scholastique, Que. .. Yorkshires.
Green, F. L., Greenwood. ..... Yorkshires.
Greer, Max, Spring Valley. ..... Tamworths.
Grinton, J. C., Armstrong, B.C. ..... Berkshires.
Grove, J. L., Ringwood. ..... Yorkshires.
Gunn, D. & Sons, Beaverton. ..... Yorkshires.
Hadwen, G. H., Duncan's, B.C. ..... Berkshires.
Hallman, A. C., Breslau. ..... Tamworths.
Hamilton, F. R., Cromarty. ..... Yorkshires.
Harber, W. W., Camrose, Alta. ..... Yorkshires.
Harding, R. H., Thorndale. ..... Chester Whites.
Hardy, Wellington, Roland, Man. ..... Yorkshires.
Harris, C. E., Heward, Sask. ..... Yorkshires.
Harris, G. S., Moresby Island, B. C., ... Tamworths.
Hartell, F. J., Cheadle, Alta. ..... Berkshires.
Harvey, John, Frelighsburg. Que. ..... Berkshires.
Harvey, P. B., McKellar. ..... Berkshires.
Hastings Bros., Crosshill. .....
Hauser, Ignatius, Weissenburg. ..... Yorkshires.
Havens, Thos. N. & Sons, Aldboro. ..... Yorkshires.
Haw, John, Virden, Man. .. .. Berkshires.
Heard, John A., Flesherton. .....
Heath, C. N., Stirling. ..... Tamworths.
Hecko, Peter, Clover Bar, Alta. ..... Berkshires.
Henders, R. C., Culross, Man. ..... Berkshires.
Heith, John, Sunnidale ..... Yorkshires.
Henry, R., Rossendale, Man. ..... Berkshires.
Henry, Wm., Rossendale, Man. ..... Berkshires.
Henry, Wm., Jr., Lavenham, Man. ..... Berkshires.
Heslop, Arthur, Appleby. ..... Yorkshires.
Hinse, Hippolyte, Ste. Pierre Baptiste, Que. Yorkshires.
Hodgson, Robert, Mahaffy. ..... Hampshires.
Hogle, S. G., Violet. ..... Yorkshires.
Holmes, C. W., Amherst, N. S. ..... Yorkshires.
Homer-Dixon, Mrs. E., Niagara Falls. .... Yorkshires.

Honey, R., Brickley. ..... Yorkshires.
Hood, G. B., Guelph. ..... Yorkshires.
Hooker, George, Ormstown, Que. ..... Duroc Jerseys.
Hoover, Henry H., Model Farm, Sask. .... Yorkshires.
Hope, G. A., Wadena, Sask. ..... Berkshires.
Horn, Peter, Regina, Sask. ..... Yorkshires.
Hoskin, Bertram, The Gully ..... Tamworths.
Hubbard, F. A., Burton, N.B. ..... Yorkshires.
Hubbell, L. D., Thamesville. ..... Chester Whites.
Hughes, A. & Son, Sarnia. ..... Berkshires.
Hulet, A. E., Norwich. ..... Yorkshires.
Hume, Alex. & Co., Menie. ..... Yorkshires.
Hunt, C. W., Indian Head, Sask. ..... Yorkshires.
Hutchison, Lew, Duhamel, Alta. ..... Berkshires.
Hyslop, Robert, Brantford. ..... Berkshires.
Ingles, W. D., Foster, Que. ..... Yorkshires.
Ings, Samuel, Hazelbrook, P.E.I. ..... Berkshires.
Jackson, Frank, Meadowvale. .....
Jackson, John R., Yatton. ..... Berkshires.
Jacques, Gaspard, St. Antoine. Que. ..... Yorkshires.
James, Clarence M., Rosser, Man. ..... Yorks & Berks.
James, Walter & Son, Rosser, Man. ..... Yorkshires.
Jeffs, E. & Son, Bondhead. ..... Berkshires.
Jewett, John R., Macinquac, N.B. ..... Chester Whites.
Jickling, J. B., Carman, Man. ..... Berkshires.
Johnson Bros., Underwood. ..... Yorkshires.
Johnston, G. F., Lansdowne. ..... Berkshires.
Johnston, Wm., Delta. ..... Berkshires.
Jones, Wm. Zenda. ..... Yorkshires.
Josselyn & Young, St. John, N.B. ..... Yorkshires.
Keene, George, Queensborough ..... Yorkshires.
Keith, Wm. & Son, Listowel. ..... Tamworths.
Kelly, John & Son, Shakespeare. ..... Berkshires.
Kelly, J. W., Hagersville. ..... Yorkshires.
Kennedy, N. Kemptville. ..... Yorkshires.
Kerr, R. J., Mimosa. ..... Berkshires.
Kerr, Wm. J., Woodroffe ..... Yorkshires.
Ketchen, D. W., Belleville ..... Chester Whites.
Ketcheson, Mrs. J. H., Chisholm. ..... Tamworths.
Kettle, C. C., Wilsonville. ..... Yorkshires.
Killough, J. H. Pense, Alta. ..... Yorkshires.
King, Oliver, Wawanessa, Man. ..... Yorkshires.
Kingsbury, D. O., Manor, Sask. ..... Berkshires.

DOMINION SWINE BREEDERS' ASSOCIATION, 1910-1911.—*Continued.*

Name and Address.	Breed.
Koelln, H. & Son, Glen Allen	Berkshires & Yorks.
Lable, Francois, Baie St. Paul, Que.	Yorkshires.
Lachapelle, Louis, St. Pie de Bagot, Que.	Chester Whites.
Laing, Thomas, Eburne, B.C.	Yorkshires.
Lalame, Pierre, Mt. Johnston, Que.	Chester Whites.
Lamarsh, Peter, Wheatley	Duroc Jerseys.
Lamb, L. P., Mayfield Station, Man.	Yorkshires.
Lang, R. L., Oak Lake, Man.	
Langelier, Gus A., Cape Rouge, Que.	Yorkshires.
Larkin, J. D., Queenston.	Berkshires.
Latowiell, W. H., South Gower,	Tamworths.
Lavallie, Louis, St. Guillaume, Que.	Yorkshires.
Lavallie, Paul, Berthier en Haut, Que.	Yorksbires.
Lavallie, Pierre, St. Norbert, Que.	Yorkshires.
Lawrence, J., Oxford Centre.	Berkshires.
Lea, Richard, Bridge Creek, Man.	Berkshires.
Leclerc, Jos., St. Charles de Bellechase, Que.	Yorks & Chester Whites
Lee & Son, Jos., Dunham, Que.	Chester Whites.
Lees, Hugh, Cana, Sask.	Berkshires.
Leggat, John & Son, Dunham, Que.	Yorkshires.
Legge, A., Minto, N.D.	Berkshires.
Lemaire, Jos., St. Majorique, Que.	Yorkshires.
Lemon, S. Kettleby.	Berkshires.
Lessard, Orila, St. Jean de Matha, Que.	Yorkshires.
Lister, W. S., Middle Church, Man.	Berkshires.
Little, Thos., Cheltenham.	Yorkshires.
Little, T. Jr., Kirkwall.	Yorkshires.
Lloyd, Jas. H., St. Lin, Que.	Yorkshires.
Long, John F., Gadsby, Alta.	Yorkshires.
Londen, Martin, Binbrook	
Lounain, Alfred, St. Jerome, Jct., Que.	Yorkshires.
Love, H. W., Irma, Alta.	
Loynachan, A. D., Glenbrook.	Yorkshires.
Lucas, J. W. M., Applehy.	Chester Whites.
Lyall, Chas. F., Strome, Alta.	Berkshires.
Lyons, S. J., Norval.	Berkshires.
Lyons, Thos., Cheltenham.	Hampshires.
Lyon, Wm., Moffat, Sask.	Berkshires.
Macdonald College, Macdonald College, Que.	Yorkshires.
Mahen, A., Milton East, Que.	Chester Whites.
Maher, Albert, Chesley.	
Mallott, Gavan, Leamington.	Poland Chinas.
Manitoba Agri. Coll., Winnipeg, Man	Berks. & Yorks.
Manning, W., Woodville.	Yorkshires.
Manseau, Francis, Nicolet, Que.	Berkshires.
Manser, Jas., Clive, Alta.	Duroc Jerseys.
Mansfield, George, Manotick.	Chester Whites.
Maquire, A. S., Elgin, Man.	Yorkshires.
Mark, G. H., Little Britain.	Berkshires.
Markle, D. G., Lamont, Alta.	Yorkshires.
Martin, E. E., Canning.	Berkshires.
Martin, W. H., & Son, Warden, Que.	Berkshires.
Martin, W. A., Gilead.	Berkshires & Yorkshires
Mathison, W. J., Tuxford, Sask.	Yorkshires.
Maxwell, E., Montreal, Que.	Berkshires.
Maynard, J. T., Chilliwack, B.C.	Duroc Jerseys.
Mercer, Thos., Markdale.	Yorkshires.
Messenger, R. J., Bridgetown, N.S.	Yorkshires.
Metcalf, H. W., Lacombe, Alta.	Yorkshires.
Middleton, H. G., Winnipeg, Man.	Yorkshires.
Millburn, Frank, Varden, Man.	Berkshires.
Miller, H. J., Lorenz.	Yorkshires.
Miller, Marshall, Brome Centre, Que.	Chester Whites.
Miller, Oscar, Cheadle, Alta.	Duroc Jerseys.
Mills, C. E., Crampton.	Tamworths.
Mills, N., South Middleton.	Chester Whites.
Miltimore, E. S., Knowlton, Que.	Tamworths.
Mitchell, George & Sons, Upper Keswick Ridge, N.S.	Yorkshires.
Moodie, R., Guelph.	Berkshires.
Moonie, R. D., Abernethy, Sask.	Berkshires.
Moore, H. B., Innisfail, Alta.	Berkshires.
Moore, W. H., Scotch Lake, N.B.	Yorkshires.
Morrow, R. O., & Son, Hilton.	Tamworths.
Mortson, W. H., & Son, Fairlight, Sask.	Yorkshires.
Moss, Walter, Sheppard, Alta.	Berkshires.
Motheral, James, Drumbo.	Berkshires.
Muma, G. B., Ayr.	Yorkshires.

Murdock, F., Greenway, Man. ..... Poland Chinas.
Murdock, Wm., Palmerston, ... Yorkshires.
Murray, A. H., Rosthern, Sask. ..... Yorkshires.
McBeath, Alex. A., Marshfield, P.E.I. ..... Yorkshires.
McColeman, John D., Grimesthorpe. .....
McClure, Geo. A., Elder's Mills. ..... Berkshires.
McComb, W. J., Beresford, Man. ..... Yorkshires.
McCullough, P. & M., East Durham, Que. .. Yorkshires.
McDiarmid, H. S., Fingal. ..... Yorkshires.
McDonald, A. D., Napinka, Man. ..... Berkshires.
McDonald, Kenneth, Ridgetown ..... Berkshires.
McDonald, P. M., Virden, Man. ..... Berkshires.
McDonald, Roderick, Manitowaning. ..... Yorkshires.
McEwen, P. J., Kertch. ..... Berkshires.
McGarr, Patrick, Guelph. .....
McGhee, Wm., Jr., Beachville. ..... Berkshires.
McGill, J. A., Neepawa, Man. ..... Berkshires.
McGrath, P., Oak Bluff, Man. ..... Poland Chinas.
McGregor & Bowman, Forest, Man. ..... Berkshires.
McGregor, Jas. D., Brandon, Man. ..... Berkshires.
McGregor, Jos. & Sons, Manitou, Man. ..... Yorkshires.
McIver, John, Langley, B.C. ..... Chester Whites.
McKean, George, Harvey, N.B. ..... Yorkshires.
McKenzie, J., Willowdale. .....
McLaren, W. W, Birtle,, Man. ..... Yorkshires.
McLean, John & Son, Aldboro. ..... Yorkshires.
McLennan, J. K., Gladstone, Man. ..... Berkshires.
McLeod, W. C. & Sons, Loch Lomond, N.S. Chester Whites.
McLeod, John, Milton West. ..... Berkshires.
McMulkin, S. L. T., Butternut Ridge, N.B. Berkshires.
McNaughton, A. J., St. Raphael, West, Ont. Yorkshires.
McNern, Wm., Wainwright, Alta. ..... Yorkshires.
McPherson, J. Wadena, Sask. ..... Berkshires.
McPherson, John, Perth. ..... Yorkshires.
McPherson, W. T., Wadena, Sask. .....
Nelles, Alex. & Son, Boston. ..... Tamworths.
Nichol, J. C., Hnbrey. ..... Tamworths.
Nicoll, J. A., Rosendale, Man. ..... Yorkshires.
Nicholson, Chester, Mt. Forest ..... Yorkshires.
Noble, Thos., Daysland, Alta. ..... Tamworths.
O'Donnell, Thos., Gad's Hill. ..... Berkshires.
O'Neil, A. & Son, Birr. .....
Ontario, Agricultural College, Guelph. ..... Yorkshires.

Orchard, Frank, Graysville, Man. ..... Tamworths.
Orchard, Harold, Lintrathen, Man. ..... Tamworths.
Ottawa Valley Journal, Ottawa. ..... Yorkshires & Berkshires
Onimet, Clovis, St. Francois de Salles, Que. Yorkshires.
Owens, Hon. Wm., Montreal, Que. ..... Yorkshires.
Oulette, D. A., Mount Malden ..... Berkshires.
Parent, J. E., Charlesburg, Que. ..... Yorkshires.
Parker, J. H. M., Lennoxville, Que. ..... Chester Whites.
Partridge, C. A., Saltcoats, Sask. .....
Patton, David, Paris Station ..... Tamworths.
Paquet, T., St. Nicholas, Que. .....
Pawson Bros., Coaldate, Alta. ..... Berkshires.
Pearson, S. J. & Son, Meadowvale. .....
Pellett, V. O. N., Semans, Sask. ..... Berkshires.
Pelletier, L. C., Montreal, Que. ..... Chester Whites.
Penitentiary, B. C., Sapperton, B.C. ..... Yorkshires.
Perreault, Toussiant, St. Esprit, Que. ..... Chester Whites.
Perry, R. E., Tees, Alta. ..... Berkshires.
Petch, Benjamin, Glen William .....
Peterson, August, Weyburn, Sask. ..... Berkshires.
Peterson, E. L., Nanton, Alta. ..... Poland Chinas.
Phaneuf, Antoine, St. Antoine, Que. ..... Chester Whites.
Phelps, W. W., Frost Village, Que. ..... Chester Whites.
Pierce, H. C., Wadena, Sask. ..... Yorkshires.
Pigeon, Willie, St. Cesaire, Que. ..... Yorkshires.
Pinkey, Wm., Cooksville. ..... Yorkshires.
Polmatier, D. H., Charlton ..... Yorkshires.
Pope, J. C., Regina, Sask. ..... Yorksnires.
Porter Bros., Appleby. ..... Berkshires.
Porter, Alex., Alexander, Man. ..... Berkshires.
Potter, A. B., Langbank, Sask. ..... Yorkshires.
Powell Bros., Elizabethville. ..... Tamworths.
Powell, C. A., Arva. ..... Hampshires.
Pritchard, R. J., Box 11, Roblin, Man ..... Berkshires.
Prouse, T. W., Union Road, P. E. I. ..... Chester Whites.
Provencher, Alf., Pidgeon, Que. ..... Yorkshires.
Pryor, Jas. A., Lemburg, Sask. ..... Berkshires.
Quebec, H. M., Clover Bar, Alta. .....
Quigley, A. J., Sintaluta, Sask. ..... Yorkshires.
Quintin, Ephrem, Mt. Johnston, Que. ..... Yorks. & Chester Whites
Ratte, Jos., St. Augustine, Que. ..... Yorkshires.
Raymond, Alder, St. Alexander de Iberville, Que. ..... Chester Whites.

DOMINION SWINE BREEDERS' ASSOCIATION, 1910-1911.—*Continued.*

Name and Address.	Breed.
Read, W. C., South Augusta	Yorkshires.
Readman, Thos., Erindale.	Tamworths.
Reagh, H., Courtland	Berkshires.
Reddick, P. J. Morrisburg.	Tamworths.
Reed, Isaac, Ardtrea	Berkshires.
Reid, James, Glen William	Yorkshires.
Reid & Co., R., Ottawa.	Tamworths.
Rich, W. P., Salmon Arm, B.C.	Berkshires.
Ritchie, Robert, Forester's Falls.	Yorkshires.
Roach, J. F., Sussex, N.B.	Chester Whites.
Robbins, Colver B., Wellandport.	Tamworths.
Roberge, J. P., St. Pierre, Que.	Yorkshires.
Robinson, B. W., Arcola, Sask.	Yorkshires.
Rock, John & Sons, Springford.	Chester Whites.
Rogers, Charles E., Dorchester.	Chester Whites.
Rogers, C. E., Ingersoll.	Chester Whites.
Root, George F., Red Deer, Alta.	Berkshires.
Roper Bros. Charlottetown, P.E.I.	Tamworths.
Ross, George W., Maxwell.	Berkshires.
Rouleau, A., St. Gregoire, Que.	Yorkshires.
Rudd, R. R., Eden Mills.	Berkshires.
Rudell A., Hespeler.	
Rutherford, J. H., Caledon East.	Hampshires.
Rye, James & Sons, Duagh, Alta.	Tamworths.
Sales, H. Bruce, Merlin	Berkshires.
Sanders, C. McG., Fortier, Man.	
Sanderson, T., Holland, Man.	Yorkshires.
Schmidtke, H. R., Lisbon, N.D.	Berkshires.
School of Agriculture, La Trappe, Que.	Yorkshires.
School of Agriculture, St. Anne de Pocatiere, Que.	Yorkshires.
Scott, F. W., Highgate	Berkshires.
Scott, John, Atha.	Berkshires.
Scott, R. A., Winnipeg, Man.	Berkshires.
Scott, Robert Russell	Yorkshires.
Seminiare of Quebec, Quebec, Que.	Yorkshires.
Semons, W. O., Sedgwick, Alta.	Berkshires.
Semple, J. G., Brule, N.S.	Berkshires.
Shanks Bros., Pettapiece, Man.	Berkshires.
Shannon Bros., Cloverdale, B.C.	Berkshires.
Shaw, Neil, Hannah, N.D.	Berkshires.
Shepherdson, W. J., Walter's Falls.	Berkshires & Yorkshires
Sheppard, Frank, Weyburn, Sask.	Berkshires.
Sheppard, Rice, Strathcona, Alta.	Berkshires.
Sherridan, A., Rang des Dusseau, Que.	Berkshires.
Shields, W. A., Milton	Berkshires.
Shirreff, Wm. G. G., Clarence	Chester Whites.
Shuttleworth, A. E., Hespeler	Yorkshires.
Sills, E. H., Napanee	Yorkshires.
Silverthorne, Wm., Burford.	Yorkshires.
Simpson, E. L., Rosser, Man.	Berkshires.
Sinclair, Peter J., Brocksden	Yorkshires & Berkshires
Skinner, Fred. T., Indian Head, Sask.	Yorkshires & Berkshires
Smeltzer, Maurice, Strathcona, Ont.	Yorkshires.
Smith, Ben., Boharm, Sask.	Berkshires.
Smith Bros., South Woodslee	
Smith, George, Fredericton Jct., N.B.	Berkshires.
Smith, George M., Edmonton, Alta.	Yorkshires.
Smith, R. J. A., Fairfield Plains	
Smith, W. M., Scotland	Poland Chinas.
Snell, C. F., Norwich	Hampshires.
Snider, Irwin A., Floradale	Yorkshires.
Snowball, J. B. Co., Ltd., Chatham, N.B.	Berkshires.
Snowden Bros., Bayfield	Berkshires.
Snowden, Samuel, Bowmanville	Berkshires.
Sours, Metaire, St. Joseph, St. Hyacinthe, Que.	Chester Whites.
Speer, Jas., Brussels	Yorkshires.
Stackhouse, A. L., Kinburn	
Standish, John E., Rougemont, Que.	Chester Whites.
Standish, Matthew, Rougemont, Que.	Chester Whites.
Stevens, John M., Bedford, Que.	Tamworths.
Stewart, David, Carman, Man.	Berkshires.
Stewart, James J., Gladstone, Man.	Yorkshires.
Stewart, Robert, Winsloe Station, P.E.I.	
Stewart, Wm. A., Chatham	
Stirton Bros., Bensfort	Yorkshires.
Stobbs, J. R., Leamington	Chester Whites.

Stoneycroft Stock Farm, Ste. Anne de Bellevue, Que. ..... Yorkshires.
Stover, Jacob, Springford ..... Chester Whites.
Stowe, J. M., & Sons, Davidson, Sask. ..... Poland Chinas.
Stuart, J. C., Dalmeny ..... Yorkshires.
Strachan, John, Pope, Man. ..... Yorkshires.
Strong, Wm. C., North Sutton, Que. ..... Berkshires.
Struthers, Alex., Newry ..... Yorkshires.
Swift, Stephen C., Magin, Alta. ..... Berkshires.
Sworder, E. D., Balcarres, Sask. ..... Berkshires.
Sylvester, Paul, Clairvaux de Bagot, Que. ... Chester Whites.
Symes, Chas., Minudie, N.S. ..... Poland Chinas
Talt, W., St. Laurent, Que. ..... Yorkshires.
Taylor, Wm., Elder's Mills ..... Berkshires.
Taylor, W. R., Woodbridge .....
Teasdale, Frank, Concord ..... Berkshires.
Teasdale, Thos., Weston ..... Berkshires.
Tees, W. E., Tees, Alta. ..... Yorkshires & Berkshires
Tetvault, Alf., St. Valerien, Que. ..... Chester Whites.
Thomson, Adam, Shakespeare ..... Berkshires.
Thompson, Jos., Sardis, B.C. ..... Berkshires & Yorkshires
Thouin, Louis, Repentigny, Que. ..... Yorkshires.
Thurston, R. E., Bobcaygeon ..... Yorkshires.
Tibbets, John W., Knowlton, Que. ..... Yorkshires.
Todd, J. W., Corinth ..... Yorkshires.
Tolmie, Dr. S. F., Victoria, B.C. ..... Berkshires.
Tomecho, Steve, Fort Qu'Appelle, Sask. ..... Berkshires.
Touchette, Wilfred, St. Jean Baptiste, Que... Yorkshires.
Tourigmy, Paul, Victoriaville, Que. ..... Berkshires & Yorkshires
Tran, W. H., Locust Hill ..... Yorkshires.
Trappistes Freres, St. Norbert, Man. ..... Yorkshires.
Tregillus, W. J., Calgary, Alta. ..... Yorkshires.
Trimble, Benjamin, Brampton ..... Berkshires.
Trudel, Theophile, St. Prosper, Que. ..... Yorkshires.
Turner, John, Carroll, Man. .....
Tuttle, George, Metcalfe. ..... Berkshires.
Vance, A. D., Prescott ..... Yorkshires.
Vance, Robert & Sons, Ida. ..... Berkshires.
Vanderlip, H. M., Cainsville ..... Berkshires.
Van Horn, Sir Wm., Montreal, Que. ..... Yorkshires.
Van Horn, Sir Wm., East Selkirk, Man..... Yorkshires.
Vessot, S. & Cie., Joliette, Que. ..... Yorkshires.
Waddell, Thos., Edwards ..... Berkshires.
Wakefield, Wm., Clover Bar, Alta. ..... Yorkshires.
Walker & Gabrielson, Rosthern, Sask. ..... Berkshires.
Walker, T. E., Langham, Sask. ..... Yorkshires.
Wallace, John H., Renfrew ..... Berkshires.
Wallace, R. M., Kars ..... Berkshires.
Wallace, Wm. A., Kars. ..... Berkshires.
Warner, D. W. & Sons, Edmonton, Alta. ..... Berkshires.
Watson, A. M., Weyburn, Sask. ..... Berkshires.
Webb, Horatio, Sardis, B.C. ..... Berkshires.
Wegg, Wm., Lewisville, Alta. ..... Berkshires.
Welker, Jas. M., Sutherland, Sask. ..... Poland Chinas.
Wells, A. C. & Son, Chilliwack, B.C. ..... Yorkshires.
White, S. H. Co., Sussex, N.B. ..... Berkshires.
White, Wellesley, Thornhill, Man. .....
Wieneke, F. W., Stony Mountain, Man. .... Poland Chinas.
Wier, Henry, Lang. ..... Yorkshires.
Wier, J. & Son, Paris ..... Berkshires.
Wilkinson, D. W., Leduc, Alta. ..... Yorkshires.
Williams, M. P., Vernon, B.C. ..... Berkshires.
Wilson, Arthur S., Hornby ..... Berkshires.
Wilson, Matthew, Fergus .....
Wilson, J. C., Sine ..... Tamworths.
Wilson, J. J., Milton ..... Berkshires.
Wilson, J. & Sons, Fergus ..... Yorkshires.
Wilson, W. C. & Son, East Oro ..... Yorkshires.
Winny, R. H., Nicola, B.C. ..... Berkshires.
Witherspoon, Alex., Glenboro, Man. ..... Yorkshires.
Witherspoon, C., Glenboro, Man. ..... Yorkshires.
Woodburn, Mrs. R. T., Lisgar Station, Que.. Yorkshires.
Woodnoiss, R., Binscarth, Man. ..... Berkshires.
Woodnoiss, E. Sydney, Binscarth, Man..... Berkshires.
Woodnoiss, C., Binscarth, Man. ..... Berkshires.
Wood, Thos., Blackstock ..... Yorkshires.
Woolings Bros., Englehart ..... Berkshires.
Wright, Geo. B., Wheatley ..... Berkshires.
Wright, Gus., Napinka, Man. ..... Berkshires.
Wright, Mrs. J. A., Barwick ..... Berkshires.
Wright, W. E., Glanworth ..... Chester Whites.
Wylie Bros., Cardinal ..... Yorkshires.
Young, Fred., Stanstead, Que. ..... Chester Whites.
Young, James M., Newdale, Man. ..... Yorkshires.
Younghusband, Geo. H., South March ..... Yorkshires.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.

Name and Address.	Variety.
Abbott, C. C., 90 William St., Stratford.	Buff Orpingtons.
Adams Bros., 127 Hamilton Rd., London.	Partridge Wyandottes.
Alexander, D. B., Shawville, Que.	
Alexander, W. J., Ashgrove.	Turkeys.
Allen, R. W., 52 Hambly Ave., Toronto	Pigeons.
Allison, Clarence, Box 158, Brampton	Buff Wyandottes.
Amos, Thos. C., Moffat.	White Wyandottes.
Andrew, Thos., Pickering	Barred Plymouth Rocks.
Andrews, Fred. A., 161 Oxford St., London.	White Plymouth Rocks.
Archer, Wm., Paisley.	Barred Plymouth Rocks, White Wyandottes.
Ardagh, I. J., 149 Walmer Rd., Toronto.	S. C. White Leghorns.
Ardagh, W. F. & Co., 319 Sherbourne St., Toronto	S. C. Brown Leghorns.
Armstrong, Adam A., Fergus.	Dressed Poultry.
Arthur, James, 731 Lorne Ave., London.	Silver Laced Wyandottes.
Bailey, George, 463 Delaware Ave., Toronto.	Pigeons.
Bailey, J. R., 5 Neeve St., Guelph.	S. P. Wyandottes, Canaries.
Baker Bros., Guelph.	Andalusians, Black Cochin Bantams, Turkeys, Geese & Ducks.
Baker, George, Simcoe	White Turkeys.
Baker & Casey, Hespeler.	Silver Laced Wyandottes.
Baldwin, L. H., Forest Hill Rd., Toronto	White Wyandottes.
Baptie, James, Springville.	Wyandottes, Colored Dorkings, Hamburgs.
Barber, R. H., 8 Wilson St., Guelph.	A. O. V. Games.
Barber, Wm. 118 Roncesvalles Ave., Toronto.	Games, Game Bantams.
Barker & Currier, 14 King St. E., Toronto.	Pigeons.
Battle, A. A., Box 274, Bowmanville.	S. C. White Leghorns.
Bawden, John, Ridgetown.	Buff Plymouth Rocks.
Beardmore, A. O. T., Acton West, Ont.	A. O. V. Fowls.
Beardmore, Miss H. L., Guelph.	White Orpingtons.
Becker, H. F., Waterloo.	S. C. Brown Leghorns.
Becker, Peter P., Waterloo.	Anconas.
Becker, W. A., West Lorne.	Golden Laced Wyandottes.
Belford, John A., 22 Creighton St., Ottawa.	Black Leghorns.
Bell, W. J., Angus.	R. C. White Leghorns, Turkeys.
Benfield, H. G., Woodstock	R. C. Rhode Island Reds.
Benson & Tregwin, Midland.	Pigeons.
Berduse, Philip, Wellesley.	Buff Wyandottes, Turkeys, Geese and Ducks.
Bible, Frank, Jr., 762 Logan Ave., Toronto.	Pigeons.
Bickle, Thos., 338 Spence St., Woodstock.	A. O. V. Games.
Billings, R., Woodstock.	Black Hamburgs.
Bishop, W. R., 367 Dundas St., London.	White Orpingtons.
Blain, Jas. W., Milton West.	White Cochin Bantams, Black Cochin Bantams.
Bleiler, Edward, Preston.	
Blood, A., 16 Fife St., Guelph.	S. C. White Leghorns.
Blyth, C., 232 Lisgar St., Toronto.	Buff Leghorns.
Blyth, Colin M., Marden.	Buff Orpingtons.
Bogart, Frank C., Napanee.	White Orpingtons.
Bogue, David, Lambeth.	White Cochins, Colored Dorkings, White Dorkings, Ducks.
Bogue, G. & J., Strathroy.	Mottled Javas, Colored Dorkings, French, Polands, Hamburgs and Ducks.
Bond, F. G., 83 Oxford St., Guelph.	Black Orpingtons, Pheasants.
Bower, Thos., Wingham.	Pyle Game Bantams.
Bowling, J. & A., Stratford.	R. C. Rhode Island Reds, Buff Orpingtons, Black Tailed Japanese Bantams.
Bradley, John, Milton.	S. C. Rhode Island Reds.
Brethour & Nephews, J. E., Burford.	Indian Games.
Bricker, A. C. & Dr. McDowell, Listowel.	Buff Plymouth Rocks, Andalusians, Houdans.
Bricker, C. D., 304 1-2 Queen St. West, Toronto.	S. C. Black Minorcas.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
Brichta, Geoffrey, Myrtle.	Dressed Poultry.
Brill, L. Austin, 129 Sackville St., London.	Partridge Cochin Bantams, Dark Brahma Bantams.
Brown, J. L., Seaforth.	White Plymouth Rocks.
Brown, Galt E., Point Fortune, Que.	Black Javas, Black Sumatra Games, Silver Grey Dorkings, Polands, Hamburgs, Silkies, Black Rose Comb Bantams.
Brown, Harry, 89 Surrey Street, Guelph.	
Brown, Peter, Galt.	Leghorns.
Burdin, S. K., 371 Waverly St., Ottawa.	White Orpingtons.
Burgess, George, 1075 Richmond St., London.	White Plymouth Rocks.
Burn, George, Tillsonburg.	A. O. C. Leghorns, Dominiques. A. O. V. Games, Silver Duckwing Leghorns, Indian Game Bantams, Geese, Ducks.
Burns, G. A., Ayr.	Silver Grey Dorkings.
Burrows, George, 90 Queen St. E., Guelph.	Silver Pencilled Wyandottes.
Butler, J. K. K., 52 Raglan St., Guelph.	Pigeons.
Cadman, Wm. W., Dereham Centre.	R. C. Brown Leghorns, S. C. Brown Leghorns, S. S. Hamburgs.
Carbert, G. B., Campbellville.	Dominiques, A. O. V. Games.
Carroll, R. G., 238 George St., London.	Columbian Wyandottes, Red Caps,
Carswell, E. A., Grafton	S. C. White Leghorns, Black Orpingtons.
Casey, Will, Mitchell.	Indian Games.
Clarke, J. W., Cainsville.	Buff Orpingtons, Utility Fowl.
Clarkson, Geo. W., Summerville.	Buff Orpingtons.
Connor, W. D., Durham.	White Wyandottes, Ducks.
Cook, Frank & Son, Midland	Pyle Games, Pyle Game Bantams, Cavies.
Cook, G. C., 66 Givens St., Toronto.	S. C. Black Minorcas.
Cole, T. J., Bowmanville.	Black Javas, Turkeys, Geese, Ducks.
Cowan, Thos., Durham.	Black Orpingtons.
Cohoe, J. E., Welland	White Orpingtons.
Cox, A. H., 142 Balsam Ave., Toronto.	Buff Wyandottes.
Crane, Alfred C., Guelph.	Turkeys, Geese, Ducks.
Crawford, John & Sons, Mitchell.	S. C. Rhode Island Reds, Indian Games.
Crowe, Chas. R., 284 Woolwich St., Guelph.	Black Red Game Bantams, A. O. V. Game Bantams.
Crowe, John, Guelph.	Pyle Game Bantams.
Cumming, Dr. C. R., Galt	Buff Cochin Bantams, Black Cochin Bantams.
Daly, Peter & Son, Box 26, Seaforth.	Golden and Silver Laced Wyandottes.
Daniels, C. J., 194 River St., Toronto.	Rhode Island Reds, Blk. Sumatra Games, Black Orpingtons, A. O. V. Fowls, Dressed Poultry.
Daniel, Wm. & Fenn, Plattsville.	Golden Laced Wyandottes, S. C. White Leghorns.
Davidson, Miss E., Collingwood.	R. C. Rhode Islands Reds, R. C. Brown Leghorns Geese, Pheasant Guinea Fowl.
Dawson, W., London East	White Wyandottes.
Day, C., Highgate.	Barred Plymouth Rocks, S. C. Brown Leghorns, Black Minorcas, Houdans.
Dickie, R. T., 836 Colborne St., London.	Light Brahma Bantams.
Dill, Peter, Dublin	White Orpingtons.
Doan, A. E., Thedford	Black Leghorns, White Dorkings, Black Hamburgs.
Doidge & McNeil, 30 Cartwright St., London.	Indian Game Bantams, White Cochin Bantams.
Doncaster, E. P., Bowmanville.	Houdans.
Dougherty, James, Mitchell.	Partridge & Columbian Wyandottes.
Douglas, D. & Sons, Mitchell.	S. C. White Leghorns, Turkeys, Geese and Ducks.
Dowton, H. H., 195 Cowan Ave., Toronto.	R. C. Rhode Island Reds.
Donovan, H. B., 14 Bank St., Toronto.	Game Bantams, Bantams, Ducks.
Doupe, Perry F., Kirkton.	R. C. Black Minorcas.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
Dulmage, Frank C., 766 Waterloo St., London.	White Plymouth Rocks, Utility Fowl.
Dundas, James, Deer Park Cres., Toronto.	Buff Wyandottes.
Dunne, H., 1492 Queen St. W., Toronto.	
Duns, J. G., Carluke	S. C. Black Minorcas.
Durand & Shields, 20 1-2 Gwynne Ave., Toronto.	Buff Wyandottes.
Durst Bros., Benmiller.	S. C. White Leghorns.
Ebert, J. C., Fonthill.	Barred Plymouth Rocks, Utility Fowl.
Elliott, W. J., St. Catharines.	Games, Orpingtons.
Ellis, Wm., Prescott.	S. C. Black Minorcas.
Elwood, John, 197 Victor Ave., Toronto.	Pigeons.
Engel, A. J., Waterloo.	S. C. Brown Leghorns.
Eyer, J. H., 580 Avenue Road, Toronto.	Buff Wyandottes, S. C. Rhode Island Reds.
Farley, Jas., 68 Flora St., St. Thomas.	White Japanese Bantams.
Faulds, T. A., 11 Victor Ave., London.	S. C. Rhode Island Reds, Black Minorcas.
Ferguson, Wm., Box 387, Brantford	S. C. White Leghorns.
Finchamp & Routledge, 462 Simcoe St., London.	Indian Games.
Fitzsimmons, Henry, Pottersburg.	White Wyandottes.
Flawn, Alfred, 130 Horton St., London.	Silver Laced Wyandottes.
Fleet, John, Hanover.	White Wyandottes.
Forsyth, L. B., Stouffville.	White Orpingtons.
Foster, Jos., Brampton.	Buff Plymouth Rocks, Utility Fowl.
Fox, Wm., 597 King St. W., Toronto.	Cavies.
Fraleigh, E., St. Mary's.	Orpingtons.
Fraleigh, Howard, Forest	Black Cochin Bantams, Turkeys.
Furminger, S. D., St. Catharines	Indian Runner Ducks.
Furneaux Bros., St. Catharines.	S. S. Hamburgs.
Fyfe, George, Gourock.	Dressed Poultry.
Gallinger, F. H., South End.	Black Leghorns.
Game, Geo. W., 150 W. Frederick St., Ft. William.	S. C. Rhode Island Reds.
Garnsey, F. B., Clayton, N.Y.	Bronze Turkeys.
Garratt, Guy L., O. A. C., Guelph.	S. C. Rhode Island Reds.
Gastle, W., 36-40 Bay St., S. Hamilton.	Buff Leghorns, Black Hamburgs.
George, A. J., 52 Clarence St., London.	Silver Duckwing Leghorns.
Gilbert, B. H., 80 Maple St., London.	White Plymouth Rocks.
Glass, Frank, London Junction	Partridge Wyandottes.
Goebel, A., Mitchell.	S. C. Black Minorcas.
Goldie, Roswell, Guelph.	Silver Grey Dorkings.
Gormley, John, Pickering	Barred Plymouth Rocks.
Gorvett, Chas., Sparta.	Black Minorcas, Andalusians.
Gould, Chas., Box 242, Glencoe.	S. C. Black Minorcas, Bronze Turkeys, Dressed Poultry.
Graesser, F., Box 182, Guelph.	Rhode Island Reds.
Graham, A. W., 16 Margaret St., St. Thomas.	Golden Laced Wyandottes, Utility Fowl.
Graham, R. B., Galt.	Buff Leghorns.
Graves & Johnston, Inwood.	Indian Games, S. C. Brown Leghorns, S. C. Black Minorcas.
Greenaway, Jas., Guelph.	S. C. Black Minorcas, Pheasants.
Greenshields, J. S., Danville, Que.	Pigeons.
Greensides, C. H., Mt. Forest,	S. C. White Leghorns.
Grier Bros., Owen Sound.	S. C. Rhode Island Reds, S. C. White Leghorns, Andalusians.
Grieves, G. W., Parkhill	Wyandottes.
Grigg, A. J., Clinton.	Game Bantams.
Grummett, Wilbert J., Brantford.	S. C. Brown Leghorns.
Gunn, Langlois & Co., Montreal.	S. C. Rhode Island Reds.
Gurney, W. A., 912 Princess Ave., London.	S. C. Brown Leghorns.
Hales, J. P. & E. A., Guelph.	Indian Games, Utility Fowl, Guinea Fowl, Dressed Poultry.
Hall, Chas. & Son, Trafalgar.	Barred Plymouth Rocks.
Halloran, John, Brantford	S. C. White Leghorns.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
Hamilton, A. S., 106 Victoria St., Toronto.	Black Langshans.
Hamilton & Scoyne, 29 Orchard St., London.	Black Orpingtons.
Hamilton, W. L., Collingwood.	White Plymouth Rocks, Pyle Game Bantams.
Harris, Cecil, Mimico	Pigeons.
Harris, Ed., 189 Markland St., Hamilton.	S. C. Rhode Island Reds.
Harrison, Jos., Collingwood.	S. C. White Leghorns, Black Minorcas.
Hart & Grimoldby, Owen Sound	Game Bantams.
Hastings, Wm., 15 Berlin St., Guelph.	White Wyandottes.
Heath, H. J., Hyde Park.	R. C. White Leghorns, Utility Fowl.
Henderson & Billings St. Mary's	R. C. Brown Leghorns.
Henderson, G. G., 24 Prospect St., Hamilton.	S. C. Brown Leghorns. Brown Red Game Bantams, Pyle Game Bantams.
Henry, J. F., 28 Green St., Guelph.	Pigeons.
Hewitt, Jack, Collingwood.	Light Brahma Bantams.
Highland Park Poultry Yards, Westboro.	White Wyandottes.
Hockin & Marsh, London.	Barred Plymouth Rocks.
Hodge & McLuckie, 20 Benlamond Ave., Toronto.	Barred Plymouth Rocks.
Hodgins, W. T., 420 Central Ave., London.	Pigeons.
Hoffman, H. A., Ridgetown.	Buff Orpingtons.
Holiday, E., 130 Clarence St., London.	Bronze Turkeys.
Holman, R., 66 Benlamond Ave., Toronto.	White Plymouth Rocks, Buff Wyandottes, A. O. V. Games, Buff Orpingtons, Bronze Turkeys, Pekin Ducks.
Holmes, Thos., 3 Weston St., London.	Barred Plymouth Rocks.
Holmes, Thos. F., 470 Brock Ave., Toronto.	Belgian Hares.
Holmhurst Poultry Yards, Whitby.	Buff Cochins.
Hood, Wm. J., 17 McTague St., Guelph.	Canaries, Squabs.
Hoover, M. R., Locust Hill.	Barred Plymouth Rocks, White Plymouth Rocks, R. C. White Leghorns.
Horn & Trotter, Lindsay	S. C. White Leghorns, Houdans.
Houden, Jos., Elmvale	Cochins, Black Sumatra Games.
Howard, W., Box 372, Guelph.	White Wyandottes, Duckwing Game Bantams.
Howell, L. C., Galt.	
Hughes, Claude, Ingersoll.	Golden Laced Wyandottes.
Hughes, R., Collingwood.	S. C. White Leghorns.
Hughes & Taylor, Court House, London.	Rhode Island Reds.
Jameson, Geo. A., Granton.	Black Orpingtons.
James, W. J., 993 Talbot St., St. Thomas.	Black Red Games.
Johnson, Chas., Mimico.	Pigeons.
Johnson, Geo. W., 430 Mary St. Hamilton.	Buff Wyandottes.
Johnson, J. R., Leamington.	Partridge Wyandottes.
Karn, H., 174 Water St., Guelph.	A. O. V. Ducks.
Karn, J. H., Delhi St., Guelph.	S. C. Black Minorcas, A. O. V. Fowls.
Kelso, Jos., Guelph.	
Kemp & Waterman, 39 Elmwood Ave., London.	Black Orpingtons.
Kiley, T. J., 855 Maitland St., London.	Game Bantams, Bantams.
Kinder, Geo. W., Box 99, Strathroy.	Red Caps.
King, Fred D., Aylmer West.	S. C. Black Minorcas, White Dorkings, Black Hamburgs.
Klager, J. E., Hespeler.	Rhode Island Reds.
Knight, Alfred, Box 103, Davisville.	Pigeons.
Knight, Isaac T., Arkell.	A. O. V. Geese, Muscovy Ducks.
Krouse, F. W., Box 587, Guelph.	Black Javas, Houdans, Utility Fowl, Dressed Poultry.
Lawless, Ed., Grafton.	White Orpingtons.
Lawless, Thos., 25 Clark St., London.	Barred Plymouth Rocks.
Lawrence & Duncan, 151 Horton St., London.	Buff Orpingtons.
Lemon, Wilber, Lynden	Silver Laced Wyandottes.
Limon, H., 10 St. Albans St., Toronto.	Pigeons.
Lipperd, David, Waterloo.	Spanish, Anconas, Red Caps.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
Lizzard, Chas., Mimico	Pigeons.
Logan, David, Bobcaygeon.	Andalusians.
Lonsberry, D. J., Cottam.	Rouen Ducks.
Lugwig, L. V., 335 Wharncliffe Rd., London.	S. C. Rhode Island Reds.
Lundy, J. H., Niagara Falls,	R. C. Rhode Island Reds.
Luscombe, John, Merton.	R. C. Rhode Island Reds.
Lush, Harry T., 182 Dublin St., Peterborough.	White Cochins, Golden Laced Wyandottes, S. C. Black Minorcas.
Luxton, A. G. H., Mount Forest.	Dark Brahmas, Black Wyandottes. Dominiques, Black Javas, Duckwing Games.
Luxton & Whetham, Mount Forest.	Dressed Poultry.
Magill, J. H., Port Hope.	Pigeons.
Marsh, F. D, Napanee.	S. C. White Leghorns, S. C. Brown Leghorns.
Martin, I. K., Galt.	R. C. White Leghorns.
Mein, Wm., 286 Sherbrooke Place, Peterboro.	Black Orpingtons.
Meldrum, James, 226 Hughson St., Hamilton.	Black Leghorns.
Millard, I. K., Box 173, Dundas.	Barred Plymouth Rocks, Utility Fowl.
Mills, W. C., 159 Sydenham St., Woodstock.	Silver Pencilled Hamburgs.
Mihm, Wm. J., 225 Waterloo Ave., Guelph.	S. C. Rhode Island Reds.
Milne, George J., South Oshawa.	Buff Orpingtons.
Milroy, M. R., Athens.	Silver Duckwing Leghorns.
Mitchell, Douglas, Edinborough Rd., Guelph.	Pigeons.
Moore, F. H. J., 199 Cannon St. E., Hamilton.	White Orpingtons.
Moore, Wm., 1 Munroe St., Hamilton.	White Orpingtons.
Montgomery, E. F., Tiffany St., Guelph.	S. C. Brown Leghorns.
Morley, James, Milton.	Black Red Games, Pyle Games.
Morton, G., Carluke.	Barred Rocks, Utility Fowl.
Mounce, J. E., Armstrong Mills.	Dressed Poultry.
Mountjoy, B. J., 132 Mt. Pleasant Ave., London.	S. C. Black Minorcas, A. O. V. Fowl.
Moyer, A. C., Waterloo.	S. C. Black and White Minorcas.
Murphy, John C., Owen Sound.	S. C. White Leghorns.
MacRae, Dr. J. N., Box 268, Galt.	R. C. Black Minorcas, Black Cochin Bantams.
McAllister, Geo., 485 Waterloo Ave., Guelph.	Black Cochin Bantams, Pigeons.
McAree, J. V., Mimico.	Pigeons.
McCahill, Daniel, Forest.	Black Rose Comb Bantams.
McCombs, E. E., Pelham Corners.	Silver Grey Dorkings, Indian Runner Ducks.
McCormack, Jas. L., Echo Place, Brantford.	S. C. White Leghorns.
McCormack, Jas. M., Rockton.	Dorkings, Geese, and Ducks.
McCulloch, A. C., Epsom.	Anconas.
McCurdy, R., 176 St. George St., London.	Black Langshans.
McCutcheon & Hedden, London.	Partridge Wyandottes.
McDonald, W. M., Box 21, Thedford.	Rhode Island Reds.
McDonald, W. R. Petrolea.	Buff Leghorns.
McDougal, A. & Son, Milton West.	White Wyandottes, Turkeys, Geese and Ducks.
McDowell, J., 215 Park Ave., Brantford.	Anconas.
McEwen, P. J., Kertch.	S. C. Brown Leghorns, Buff Orpingtons.
McGinnis, Henry, 36 Waterloo St., Guelph.	Pigeons.
McGregor, George, Bobcaygeon.	Silver Laced Wyandottes, S. C. Black Minorcas.
McIntosh, P. A., Spencerville.	Black Cochins, Golden Laced Wyandottes, S. C. Brown Leghorns, Houdans, White Polands, Red Caps, Turkeys, Geese and Ducks.
McKee, Harry H., Norwich	Silver Grey Dorkings.
McKenzie, W. D., Box 54, Galt	Black Orpingtons.
McLean, Al. H., 830 Colborne St., London.	S. C. White Leghorns.
McLeod, Wm. J., 26 Evergreen Ave., London.	Black Leghorns.
McNally, W. J., Guelph	Black Cochin Bantams, Pigeons.
McNeil, Wm., 778 Waterloo St., London.	Polands, A. O. V. Fowls.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
McPherson, James, Mt. Forest	White Plymouth Rocks, Toulouse Geese.
Macpherson, John, 57 Dundas St., London	Golden Laced Wyandottes.
Newstead, John, Guelph	Cavies.
Nickell, Wm., 167 Penrose St., Sarnia	Black Minorcas.
Niven, J. S., 423 Colborne St., London	A. O. V. Fowls.
Nixon Bros., Tamblings Corners	Indian Games.
Northey, J. A., 42 Forest Hill Rd., Toronto	Black Cochin Bantams.
O'Dell, John, London	Orpingtons.
Oke, Richard, Box 361, London	Javas, LaFleche, Hamburgs, Bantams.
O'Neil & Son, A., Birr	A. O. V. Fowls.
Orr & Creeden, 54 Albion St., Brantford	S. C. Brown Leghorns.
Ortwein, J. W., Hensall	White Plymouth Rocks.
Pantler, W. E., Preston	White Plymouth Rocks.
Parker, Leonard, 1042 Dufferin St., Toronto	Rabbits.
Parkinson, John, Crumlin	Pyle Games.
Parkinson, G. & W., Eramosa	
Parkinson, R. J., 6 Leavitt St., Granton	R. C. Brown Leghorns.
Parrott, Thos., Collingwood	Black Red Games.
Partlo, H. W., Ingersoll	Light Brahmas, Columbian Wyandottes, Light Brahma Bantams.
Patterson, Robert, 23 Wellington St., Guelph.	Wyandottes.
Pearson, J. J., Cooksville	White Chinese Geese.
Pearson, Wm., 249 Suffolk St., Guelph.	A. O. C. Langshans, Game Bantams.
Peart, J. E., 31 Pine St., Hamilton	Black Javas.
Penwarden, E. O., St. Thomas	Houdans.
Pettit, Harry C., Winona	White Plymouth Rocks.
Pettit, Jas., Ingersoll	Partridge Cochins, Buff Cochin Bantams.
Pickrell, Wm. J., 775 Indian Rd., Toronto	White Wyandottes.
Pingel, Dr. & Son, 316 Queen Ave., London	Pigeons.
Pfaff & Loehr, New Hamburg	White Plymouth Rocks, Wyandottes, S. C. White Leghorns, Black Orpingtons.
Phenix, W., St. Thomas	Houdans.
Philpot, Jack, 12 Wellington St., Guelph	Black Javas.
Powney, J. C., Blyth	Black Leghorns, Red Caps, A. O. V. Ducks.
Pringle, John, 187 Worthey Rd., London	Barred Plymouth Rocks.
Pritchard, Jack, North Wakefield, Que.	Indian Games.
Pudifin, C. H., 681 Dufferin St., Toronto	Pigeons.
Rawlings, E. A., Forest	Black Orpingtons.
Read, J. C., Owen Sound	White Minorcas.
Readwin, A. & T., Guelph	Black Wyandottes, Black Leghorns, Pigeons, Squabs, Dressed Poultry.
Red Feather Yards, London	R. C. Rhode Island Reds.
Reid, W. H., 35 Union St., Kingston	Pigeons.
Reid, Wm. Jas., 93 Surrey St., Guelph.	S. C. Rhode Island Reds.
Rennie, W. G., Ellesmere	Black Orpingtons.
Rice, Chas. F., Bowmanville	Spanish.
Rife, Wm. A., Hespeler	White Plymouth Rocks.
Robert, J. W., 34 West Ave., St. Thomas	Black Red Games.
Robertson, Geo., Box 242, Ottawa	White Plymouth Rocks.
Robertson, Geo. A., Glen Farm, St. Catharines	White Plymouth Rocks, Buff Orpingtons.
Robertson, W. O., Eden Mills	Buff Plymouth Rocks, S. C. White Leghorns, W. C. B. Polands, S. S. Hamburgs, Guinea Fowl.
Robinson, Al., 317 High Park Ave., Toronto	Game Bantams.
Robinson, M. M., 272 East Ave., N. Hamilton.	R. C. Black Minorcas.
Rondeau, T. E., Courtright	S. C. White Leghorns.
Rook Bros., Prescott	Game Bantams.
Rooke, Jos., 461 Drew St., Woodstock	Columbian Wyandottes.
Rose, Hugh A., Welland	Cochins, Black Wyandottes, Bantams.
Rosser Bros., 60 Close Ave., Toronto	Bantams, Game Bantams.
Routledge, C. G., 2064 Davenport Rd., West Toronto	S. C. Rhode Island Reds.
Rundle, S., 26 Clark St., Guelph	Partridge Wyandottes.
Russell Farm, 1308 Queen St. E., Toronto	Barred Plymouth Rocks, Wyandottes, Rhode Island Reds.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
Sage, L. C., 152 Horton St., London	Black Cochin Bantams.
Salmon, C. E., 232 Dundas St., Guelph	Pigeons.
Saunders, E., 592 Maitland St., London	Silkies.
Saunders, J. H., London	
Saunders, R. H., Box 22, Ealing	Golden-Laced Wyandottes.
Saunders, Sid., 29 Division St., Guelph	White Wyandottes.
Scanlon Bros., Fergus	Geese, Dressed Poultry.
Schario, A. L., Fergus	Games, S. C. White Leghorns.
Schelly, S. J., Brantford	Columbian Wyandottes.
Schelter, C., Fonthill	Silver-pencilled Wyandottes, White Orpingtons.
Scott, Hugh A., Caledonia	Buff Orpingtons.
Scott, Peter, Guelph	S. C. Brown Leghorns.
Scott, T. H., 39 Elgin St., St. Thomas	Columbian Wyandottes, S. C. Brown Leghorns, Light Brahma Bantams.
Shea, Thos. M., Fergus	Geese, Rouen Ducks.
Shether, A. E., 228 15th St., Brandon, Man.	
Shaw & McIntosh, Forest	White Plymouth Rocks, Light Brahma Bantams.
Shields, Geo., 24 Edgewood Ave., Toronto	
Shields, Jas. W., 89 Frances St., Hamilton	White Plymouth Rocks.
Smith, A., 151 Elizabeth St., Guelph	Black Leghorns, Andalusians.
Smith, Howard B., Winona	Rhode Island Reds.
Smith, R. & R. Alhen, Jane St., West Toronto	S. C. Black Minorcas.
Smith, W. M., Scotland	Turkeys, Geese, Dressed Poultry.
Snetsinger, Jas., Eamer's Corners	White Orpingtons, Turkeys, Wyandottes, Spanish.
Sockett, John, Rockwood	Buff Plymouth Rocks, Silver Grey Dorkings, Utility Fowl, Dressed Poultry.
Spence, W. H., 308 Montreal St., Kingston	Barred Plymouth Rocks.
Spiars Bros., 59 Devonshire St., Guelph	Bantams.
Spies, Samuel C., St. Thomas	Hamburgs.
Spry & Mick, 144 Dundas St., Toronto	Buff Wyandottes.
Stapleford & Son, S., Watford	Black Red Games.
Steele, J. P., Mount Forest	White Plymouth Rocks.
Steer, Wilber, 170 Hamilton Rd., London	Pigeons.
Stepney, Harry, Brooklin	Dressed Poultry.
Storey, John, 189 First Ave., Toronto	Pigeons.
Stratford, Reg., Brantford	Black Rose Comb Bantams, Golden Pheasants, Belgian Hares.
Streib, Jacob, West Lorne	S. C. Brown Leghorns.
Stuart, Wm., 54 Strange St., Guelph	S. Sebright Bantams.
Sutherland, A., 12 Clark St., London	Pigeons.
Swartout, Ross, Newport	R. C. Black Minorcas.
Switzer, A. H., Woodham	Wyandottes, Black Leghorns, Andalusians, Black Orpingtons, Geese, Ducks.
Syer, E., Milton	S. C. White Leghorns.
Taylor, Douglas T., 39 London St., Sherbrooke, Que.	Light Brahmas.
Taylor, J. G., Woodstock	S. C. Brown Leghorns.
Telfer, Jos., Milton West	Games, Silver Grey Dorkings, S. P. Hamburgs, Turkeys, Geese.
Teskey, R. J., St. Mary's	S. C. Black Minorcas.
Tilt, C. A. R., Doon	Dark Brahmas, Black Cochins, Black Langshans, Bantams, Geese, Ducks.
Thomson, W. H., Brampton	Barred Plymouth Rocks.
Thorne, Hubert, 225 Burwell St., London	Barred Plymouth Rocks, R. C. White Leghorns, Dressed Poultry.
Teale, W. J., 25 Eramosa Rd., Guelph.	A. O. C. Langshans, A. O. V. Games, Pigeons, Barred Plymouth Rocks.
Tomalin, Jos., 593 Ossington Ave., Toronto	Dressed Poultry.
Topping, N., Tambling's Corners.	Indian Games.
Tovell, C. H., 113 Queen St., Galt	Buff Leghorns.
Tozer, L., 509 Richmond St., London	Black Sumatra Games, R. C. Brown Leghorns, Partridge Cochin Bantams.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT WINTER FAIR, 1911.—*Continued.*

Name and Address.	Variety.
Trebilcock, A. H., 889 Lorne Ave., London	Game Bantams.
Trimble, Geo. D., 760 Indian Rd., West Toronto	Pigeons.
Turnbull, Walter, Waterloo St., Guelph	Silver-Penclilled Wyandottes, S. C. Rhode Island Reds, S. C. Black Minorcas.
Tyson, Arthur W., 39 Melville St., Guelph	Game Bantams.
Underwood & Campbell, Berlin	Buff Plymouth Rocks, White Orpingtons, Bantams.
Vanstone, R., Wingham	White Plymouth Rocks.
Vickers, Thos., Owen Sound	White Minorcas.
Vidal, H. F., Beamsville	Black Orpingtons.
Vogt, C., 137 Dunn Ave., Toronto	Rhode Island Reds.
Vout, R. W., 38 Pearl St. W., Brockville	White Wyandottes.
Vrooman, W. J., Tutela	Columbian Wyandottes, Buff Leghorns.
Wadsworth, Gordon F., 96 Carling Ave., Ottawa	Columbian Wyandottes.
Wales, F., Milton	Partridge Cochins, S. C. White Leghorns, Houdans, White Turkeys.
Walker, W. R., 43 Surrey St., Guelph	Black Red Game Bantams.
Ward, Thos. E., 22 Mill St., Guelph	White Wyandottes.
Warrington, J. H., Cornwall	Black Sumatra Games, Spanish Dorkings, Creve Coeurs, LaFleche Polands.
Webster, Frank, 169 Neeve St., Guelph	Black Rose Comb Bantams, Pigeons.
Wees, Burt M., Sarnia	Wyandottes.
Westman, A. H., Granton	White Orpingtons.
Wheadon, R. L., Bracebridge	R. C. Black Minorcas, Black Hamburgs, Black R. C. Bantams.
Whetham, Geo., Mount Forest	Spanish, Houdans, Dressed Poultry.
Whitney, C. J., Galt	White Plymouth Rocks.
Wicks & Son, E., Bedford Park	Buff Orpingtons.
Willey, A. J., Ekfrid	Barred Plymouth Rocks.
Willoughby, J. H., Guelph	R. C. Rhode Island Reds, Black Cochin Bantams.
Winstanley, Thos. T., 12 Emma St., Guelph	Barred Plymouth Rocks.
Wilson, C. H., Hawkestone	Brahmas, R. C. Brown Leghorns, Polands.
Wilson, Henry, Ashgrove	A. O. V. Turkeys.
Wilson, Wm., 219 Grange St., Guelph	White Wyandottes, White Orpingtons.
Wismer, Bert, Preston	African Geese.
Wood, Gardiner, Barrie Hill	Dressed Poultry.
Worrod, Thos., Angus	Bronze Turkeys.
Worthington, C. D., 43 Ontario St., Guelph	Minorcas, Andalusians, Dressed Poultry.
Wright, Daniel, Ponsonby	
Wyatt, Hugh, London	Buff Cochins.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE ONTARIO LIVE STOCK AND POULTRY SHOW, 1911.

Adams Bros., 127 Hamilton Rd., London	Partridge Wyandottes.
Alexander, D. B., Shawville, Que.	S. C. Buff Leghorns, Buff Orpingtons, Dressed Poultry, Buff Plymouth Rocks, Rabbits.
Alexander, S. E., Beachburg	Barred Plymouth Rocks, Dressed Poultry.
Armstrong, Adam, Fergus	Dressed Poultry.
Armstrong, Marguerite, 65 Third Ave., Ottawa	A. O. V. Game Bantams.
Armstrong, T. A., Ottawa West	Barred Plymouth Rocks, White Wyandottes.
Baker, E. S., Guelph	Andalusians, Bantams, Ducks, Geese, Turkeys.
Baker, Geo., Simcoe	Turkeys.
Baptie, Jas., Springville	Wyandottes, Dorkings, Hamburgs, Black Cochin Bantams.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1911.—*Continued.*

Name and Address.	Variety.
Barber, W., 118 Roncesvalles Ave., Toronto.	Games, Game Bantams, Dressed Poultry.
Barr, Alex. S., Cobden	S. P. Hamburgs.
Baum, John, Steelton	A. O. V. Orpingtons, Black Hamburgs.
Beauchamp, Phil., 246 Rockester St., Ottawa.	Pigeons, Doves.
Beeson, G., 91 Second Ave., Ottawa	Pigeons.
Belanger, Jos. P., 101 Bell St., Ottawa	S. C. White Leghorns.
Belford, John A., 22 Creighton St., Ottawa.	S. C. Black Leghorns.
Benjamin, E. H., 360 Albert St., Ottawa	Pit or Old English Games.
Benson, J. A. & M., Billing's Bridge	White Wyandottes, White Minorcas, Dressed Poultry.
Blakely, R. E., 68 John St., Ottawa	Buff Wyandottes, A. O. V. Fowls, Pigeons.
Bock, E. Albert, 450 Central Ave., London	White Minorcas.
Bourguignon, A. E., 152 Division St., Ottawa	Pigeons.
Bradley, Fletcher, 100 Waverly St., Ottawa.	S. C. White Leghorns, White Orpingtons.
Bradley, Geo. R., Carsonby	Turkeys, Dressed Poultry.
Burdin, S. K., 371 Waverley St., Ottawa	White Orpingtons.
Bureau, Arthur, 202 Bolton St., Ottawa	Pigeons.
Cabana, Louis, 22 Norkill Rd., Sherbrooke, Que.	Columbian Wyandottes, Anconas, Bantams.
Carleton, W. H., 110 Stanley Ave., Ottawa.	S. C. White Leghorns.
Carrier, Arthur, 213 Water St., Ottawa	Pigeons.
Casselman, A. A., Church St., Winchester	Andalusians.
Cole, T. J., Bowmanville	Cochins, Langshaus, Black Javas, B. B. Red Game, Turkeys, Geese, Ducks.
Collins & Cornish, Ottawa	Light Brahmas, S. C. Brown Leghorns,
Cosh, H. V., Bobcaygeon	Andalusians.
Craig, Geo., 29 Herridge St., Ottawa E.	Old English or Pit Games.
Craig, W. J., 254 Flora St., Ottawa	White Plymouth Rocks.
Croshaw, Mrs. W., 165 Russell Ave., Ottawa.	White Wyandottes.
Crouch, Mrs. Sarah, Billing's Bridge	S. C. White Leghorns, Dressed Poultry.
Cumming, D., Russell	C. Indian (laced) Games, R. C., A. O. S. V. Leghorns, S. S. Hamburgs, Turkeys, Geese, Ducks, Dressed Poultry.
Daly, Jas., 54 Rideau St., Kingston	Barred Plymouth Rocks.
Dempsey, H. D., 15 Elm St., Ottawa	Belgian Hares.
Despres, A. C., 99 Albion St., Hull, Que.	Buff Cochin Bantams, Pigeons.
Deverell Bros., Whitby	Buff Cochins, A. O. V. Orpingtons. Black Cochin Bantams.
Dickson, Wm., Winchester	R. C. Rhode Island Reds, Black Minorcas, Dressed Poultry.
Dowton, Herbert H., 195 Cowan Ave., Toronto	R. C. Rhode Island Reds.
Dynes, A., Parkdale Ave., Ottawa	Dressed Poultry.
Elgie, Jas. A., 907 Lorne Ave., London	S. C. Brown Leghorns.
Ellis, Sydney E., Renfrew.	S. C. Buff Leghorns.
Ellis, Wm., Prescott	Black Minorcas, Dressed Poultry.
Fletcher, Rev. G. E., Cobden	Black Orpingtons.
Foster, A. H., Twin Elm	Barred Plymouth Rocks.
Fraleigh, H., Forest	Black Cochin Bantams.
Friend, Geo. H., Overton St., Cumming's Bridge	Partridge Cochins.
Frith, E. R., Maxville	Black Minorcas.
Gallinger, F. H., South End	S. C. Black Leghorns.
Gallipeau, Geo., Smith's Falls.	White Wyandottes, R. C. Rhode Island Reds.
Game, Geo. W., Fort William West	S. C. Rhode Island Reds.
Gillespie Bros., Ventnor	S. C. Buff Leghorns, Andalusians.
Gill, John I., 173 Friel St., Ottawa	R. C. Rhode Island Reds, Pigeons.
Gisborne, Francis H., 110 Cartier St., Ottawa	White Orpingtons.
Glenholm Farm, King St. W., Gananoque	S. C. White Leghorns.
Gormley, John, Pickering	Barred Plymouth Rocks.
Grant, Jno., Rockland	Buff Orpingtons.
Grant, R. H., Hazeldean	Dressed Poultry.
Greenshields, J. Stuart, Box 31, Danville, Que.	Pigeons.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1911.—*Continued.*

Name and Address.	Variety.
Grimes, Jno. Allan, 364 Cooper St., Ottawa.	S. C. Rhode Island Reds.
Gunning, J., 50 Queen St., Sherbrooke, Que.	Andalusians, Black Cochin Bantams.
Gunn, Langlois Co., Bondville, Que.	Barred Plymouth Rocks, Wyandottes, S. C. Rhode Island Reds.
Halliday, W. D., Spencerville	Games, Houdans, White Polands, Cochins, A. O. V. Wyandottes, Buff Orpingtons.
Hellyer, A. W. E., 69 Belmont Ave., Ottawa.	Buff Orpingtons.
Hamilton & Scoyne, 29 Orchard St., London.	A. O. V. Orpingtons.
Hiawatha Pigeon Lofts, 635 St. Patrick St., Ottawa	Pigeons.
Highland Park Poultry Yards, Westboro	White Wyandottes.
Higman, Geo., Jr., 217 Henderson Ave., Ottawa	Partridge Wyandottes.
Higman, Geo., Sr., 61 Sussex St., Ottawa	Wyandottes.
Hills, Joseph, 905 Maitland St., London	Pekin Ducks.
Hintonburg Poultry Yards, 981 Wellington St., Ottawa	Plymouth Rocks, Wyandottes, Rhode Island Reds, S. C. White Leghorns, Black Minorcas, Orpingtons.
Hoover, M. R., Locust Hill	Barred Plymouth Rocks R. C. A. O. S. V. Leghorns.
Hughes, Claude, Ingersoll	Golden Wyandottes.
James, F. A., 153 Centre St., Ottawa	Barred Plymouth Rocks.
Lake, G., 155 Russell Ave., Ottawa	White Wyandottes, S. C. White Leghorns.
Lambertus, J. A., Eganville	Barred Plymouth Rocks.
LaRose, Chas., Cornwall	Barred Plymouth Rocks, Indian Game, Bantams, Andalusians, Drressed Poultry.
Lathey, Myron A., Box 413, Ottawa	White Plymouth Rocks.
Lawless, Edward, Grafton	Orpingtons.
Lawson, J., Almonte	Games.
Lush, Harry T., 182 Dublin St., Peterboro.	White Cochins, Golden Wyandottes, Orpingtons, Hamburgs, Bantams, Dressed Poultry.
Marsh, F. D., Napanee	White Plymouth Rocks, Leghorns.
Mason, J. & Son, 188 Turner St., Ottawa.	Buff Wyandottes, A. O. V. Game Bantams, Bantams, Dressed Poultry.
Milroy, M. R., Athens	Silver Duckwing Leghorns.
Montgomery, F. E., Ottawa West	S. S. Hamburgs.
Moodie, N. G., Chesterville	Barred Plymouth Rocks, Columbian Wyandottes, S. C. White Leghorns, Black Minorcas, W. C. B. Polands, Geese.
Moore, Wm., Lake Ave., Carleton Place	R. C. Rhode Island Reds, Red Caps.
Moyer, A. C., Waterloo	Minorcas.
Muirhead, D., Renfrew	Dressed Poultry.
Mulville, J. V., Westport	A. O. V. Orpingtons.
McBride, Alex, Cobden	A. O. V. Fowls.
McCaffrey Bros, Russell	Buff Plymouth Rocks.
McCulloch, A. C., Epsom	Anconas.
McCurdy, R., 176 St. George St., London	Langshans.
McDougall & Bedlow, Fairfield East	Buff Orpingtons, Silver Grey Dorkings, Houdans, Turkeys, A. O. V. Ducks.
McInnes, G. A., Prescott	Black Minorcas, Bantams, Pigeons.
McIntosh, P. A., Spencerville	Dark Brahmas, Wyandottes, Games, Leghorns, White Minorcas, Silver Grey Dorkings, Houdans, Black Hamburgs, Red Caps, White Polands, Black Red Game Bantams, Turkeys, Geese, Ducks.
McKellar, Donald, Hawkesbury	S. C. White Leghorns.
McLean, C. W., Spencerville	Black Javas, Spanish.
McNeil, Wm., 778 Waterloo St., London	Polands, A. O. V. Fowls.
Nantel, W. B., St. Jerome, Que.	Brahmas, Cochins.
Neate, M. C., 35 Sussex St., Ottawa.	A. O. V. Orpingtons.

MEMBERS OF THE EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED AT THE EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1911.—*Concluded.*

Name and Address.	Variety.
Nolet, J. H., Ottawa.	Pigeons.
Odell, M. C., 52 Cooper, St., Ottawa.	Cavies.
Oke, Richard, Box 361, London.	LaFleche, Hamburgs, Bantams.
Osborne, W. M., Brockville.	S. C. Black Leghorns, White Minorcas.
Parker, J. A., 68 Rochester St., Ottawa.	White Wyandottes, Buff Cochin Bantams.
Patterson, Robert, 23 Wellington St., Guelph.	Wyandottes.
Peaker, J. M., Customs, Wood Building, Ottawa.	Black Minorcas.
Pingel, Dr. & Son, 316 Queen Ave., London.	Pigeons.
Plant, W., 25 Garland St., Ottawa.	Buff Cochin Bantams, Pigeons.
Point Fortune Poultry Yards, Point Fortune, Que.	Black Javas, Games, Black Minorcas, Silver Grey Dorkings, Hamburgs, Polands, A. O. V. Fowl.
Pranschke, W. C., 86 Concord St., Ottawa. East.	Columbian Wyandottes.
Pritchard, Jack, North Wakefield, Que.	C. Indian (laced) Game, R.C., A. O. S. V. Leghorns.
Reid, W. H., 35 Union St., Kingston.	Pigeons, Pheasants.
Robertson, Geo., Box 242, Ottawa.	White Plymouth Rocks, R. C., A. O. S. V. Leghorns.
Rock, F., Mechanicsville.	Pit or Old English Games.
Rook Bros., King St., Prescott.	Game Bantams.
Rose, C. E., Barnston, Que.	Partridge Wyandottes.
Roy, J. B. A., St. Pie, Que.	Partridge Wyandottes, S. C. Brown Leghorns, Bantams.
Russell, Jos., 437 Jarvis St., Toronto.	Barred Plymouth Rocks, White Wyandottes, Rhode Island Reds.
Salmon, C. E., 232 Dundas Rd., Guelph.	Pigeons.
Sauve, P. H., 1469 Notre Dame St., W., Montreal, Que.	Light Brahmas.
Sawden, Chas., 259 Leslie St., Toronto.	S. C. Rhode Island Reds, Golden Bearded Polands.
Shaw, Gordon, 85 James St., Ottawa.	White Wyandottes.
Shaw & McIntosh, Forest.	Light Brahma Bantams.
Slinn, T. G., 208 Patterson St., Ottawa.	Dressed Poultry.
Slinn, W. H., 208 Patterson St., Ottawa.	Dressed Poultry.
Snetsinger, Jas., Eamers Corners.	Dark Brahmas, Buff Cochins, Langshans, Buff Plymouth Rocks, Old English or Pit Games, Leghorns, Spanish, White Orpingtons, Dorkings, Red Caps, Black Cochin Bantams, Turkeys, Geese, Ducks, Pea Fowl, Dressed Poultry.
Storey, John, 186 Armstrong St., Ottawa.	R. C. & S. C. Rhode Island Reds.
Taeger, John, 39 Wall St., Hull, Que.	R. C. Rhode Island Reds.
Thomson, J. Ross, Westboro.	White Orpingtons, Dressed Poultry.
Tomalin, R. & J., 593 Ossington Ave., Toronto.	Dressed Poultry.
Vogt, C., 137 Dunn Ave., Toronto.	R. C. Rhode Island Reds.
Wadsworth, G. F., 96 Carling Ave., Ottawa.	Columbian Wyandottes.
Wales, F. Milton.	Partridge, Cochins, Leghorns.
Wallace, M. C., 497 Cumberland St., Ottawa.	Dark Brahmas, A. O. V. Orpingtons, Hamburgs.
Warrington, J. H., Cornwall.	Dark Brahmas, Indian Games, S. C. Black Leghorns, Spanish, White Minorcas, Dorkings, Creve Coeur, LaFleche, Red Caps, Polands, A. O. V. Fowls, A. O. S. V. Bantams.
Wilson, C. H., Hawkestone.	Brahmas, Cochins, Leghorns.
Wood, Gardiner, Barrie Hill.	Dressed Poultry.
Zavitz, L. V., 317 Bank St., Ottawa.	Black Minorcas

REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1911

PART I.—FARMERS' INSTITUTES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1912.

Printed by
WILLIAM BRIGGS
29-37 Richmond Street West
TORONTO

Farmers' Institutes of Ontario, 1911

To the Honorable Minister of Agriculture:

In view of the fact that the Department did not call a Convention of Farmers' Institute and Farmers' Club Representatives in the Fall of 1911, and also because of the fact that a great deal of ground is covered in the other Reports and Bulletins to which the members of the Farmers' Institutes are entitled, it was decided not to publish Part I. of the Report for 1911. I have pleasure, therefore, in submitting only Part II., containing list of meetings, speakers, and their subjects, statistics, financial statement, etc.

By referring to Part II., you will note that there is an increasing interest in special meetings, such as Fruit Institutes, Dairy Meetings, Short Courses in Stock and Seed Judging, etc. The farmers are taking a deeper interest in the formation of Farmers' Clubs. Altogether the interest in meetings and demonstrations for agricultural instruction purposes is increasing, and while the attendance at the Institute Meetings conducted in the old way is somewhat less than in previous years, the number of persons being reached through the various forms of activity under the direction of this branch is gradually increasing. The growing interest on the part of the young men of the Province speaks well for the future of agricultural instruction, and, if the calls for scientific instruction are to be met, it will necessitate an increase in the facilities for giving assistance to the farmers through the regular and special Institutes, short courses, etc.

We find that the work which the district representatives are conducting in a large number of the counties of the Province is enlightening the farmers as to the great benefits which can be derived through meetings, demonstrations, and from specialists in various lines, and also by the farmers meeting together to discuss their own problems in their own way. The greater the variety of work undertaken by the different branches of the Department of Agriculture, the greater the call on this Department to furnish instructors.

G. A. PUTNAM,

Superintendent.

Toronto, February 15th, 1912.

ANNUAL REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1911

PART II.—MEETINGS AND STATISTICS

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

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KEY TO FARMERS' INSTITUTE MEETINGS, 1911-12.

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Welland	20, 27	4	10
Wellington, Centre	27	..	12
Wellington, East	21, 28	5	12
Wellington, South	21	5	..
Wellington, West	21, 28	5	12
Union	19, 24	1	6
Wentworth, North	20, 27	4	10
Wentworth, South	20, 26	4	10
York, East	21, 28	6	13
York, North	28	..	13
York, West	28	..	13

PART II.

FARMERS' INSTITUTES OF ONTARIO. 1911-1912.

ANNOUNCEMENT OF SUPERINTENDENT.

This volume of the Farmers' Institute report contains announcements of meetings for the Winter of 1911-12, also statistical statement of the local organizations throughout the Province for the year ending May 31, 1911. Part I. of the Farmers' Institute report contains report of the Convention held in the Fall of 1910 and articles on agriculture of special interest to the farmers.

In addition to the meetings announced herein, we are planning for a number of short courses in stock and seed judging, fruit growing, poultry raising and dairying.

The attendance at regular Farmers' Institute meetings shows a slight decrease for the year 1910-11, while the membership of the year ending December 31, 1910, shows a slight increase over the preceding year. The many words of appreciation from Institute officers would indicate that the work of the past season has been most beneficial to the farming community. We regret the lack of interest in some localities, but are encouraged by the renewed interests on the part of the farmers in many sections.

Special Meetings.

The number of special meetings, where only one line of work is followed for one or two days, is gradually increasing. Special meetings of this nature are more appreciated than the regular Farmers' Institute meetings, at which it is usual to take up two or three different lines, and discussions are held upon general farm topics. As the number of farmers who specialize increases, the work of the special Institute will extend.

Women's Institutes.

This feature of departmental work is gradually extending, and we now have over 650 societies and a membership of nearly 20,000. The nature of the work undertaken by the Women's Institutes is so well known that it is unnecessary to enlarge upon it in this volume. The older organizations are growing in enthusiasm and effectiveness of work and the newly formed branches are for the most part already well established.

Farmers' Institute Clubs.

The gradual growth in this form of organization shows that the farmers are appreciating more and more the advantages to be gained through local organizations in which they have an opportunity of discussing their own problems in their own way. A booklet on this feature of work will be sent to officers and directors of all Institutes early in the fall of 1911, and the Department is prepared to furnish copies to all who may apply for same. Institute officers cannot do better work than to encourage and assist the formation of local clubs.

We appeal to the Institute officers and directors to continue the loyal support which they have extended to the Institutes in the past and co-operate in an effort to make the season of 1911-12 a banner one in this feature of Agricultural education.

ATTENDANCE, MEMBERSHIP, ETC., FOR 1910-1911.

Institutes holding largest number of meetings during the year ending May 31, 1911, are:—

Kent, W.	25	Grey, Centre	14
Simcoe, Centre,	25	Huron, South	14
Lambton, East	24	Lennox	14
Brant, North	22	Waterloo, South	14
Ontario, North	21	Bruce, Centre	13
Grey, North	19	Dufferin	13
Middlesex, North	19	Elgin, East	13
York, North	19	Essex, South	13
Oxford, North	18	Frontenac	13
Oxford, South	18	Grey South	13
Huron, West	17	Hastings, West	13
Ontario, South	17	Norfolk, South	13
Wellington, East	17	Peterboro, East	13
Wentworth, North	17	Simcoe, South	13
Algoma, North Shore	16	Bruce, West	12
Muskoka, North	16	Glengarry	12
Peel	16	Grey Centre	12
Wellington, Centre	16	Huron, East	12
Durham, East	15	Lambton, West	12
Leeds, N. & Grenville	15	Northumberland, East	12
York, East	15	Northumberland, West	12

Institutes having the largest attendance at their meetings:—

Lambton, East	2880	Peterboro, East	1832
Huron, East	2423	Grey, Centre	1767
Middlesex, North	2406	Wellington, East	1685
Perth, South	2290	Oxford, South	1670
Bruce, South	2230	Lincoln	1650
Waterloo, North	2155	Wentworth, North	1616
Perth, North	1980	York, North	1555
Lambton, West	1905	Peel	1544
Wentworth, South	1885	Middlesex, East	1527
Glengarry	1870	Waterloo, South	1510

Institutes having the largest membership for the year ending 1910:—

Halton	803	Dundas	381
Waterloo, North	596	Northumberland, West	374
Waterloo, South	530	Carleton	372
Perth, North	493	Huron, Centre	372
Perth, South	462	York, North	349
Lambton, West	431	Brant, North	344
Oxford, South	429	Grey, North	331
Simcoe, Centre	424	Dufferin,	330
Ontario, North	402	Lambton, East	316
Peel	401	Middlesex, East	313
Wellington, Centre	400	Glengarry	308

FRUIT INSTITUTES.

During the season of 1910-11 special Fruit Institutes were conducted in the following places:—Ancaster, Aultsville, Aughrim, Alvinston, Alliston, Bennington, Brantford, Brighton, Bowmanville, Boston, Burgessville, Burlington, Cainsville, Camlachie, Colborne, Cobourg, Curries, Delta, Dunnville, Eastwood, Embro, Frankford, Goderich, Hickson, Iroquois, Kingsville, Lakeside, Lancaster, Leamington, Millgrove, Moulinette, Morrisburg, Newcastle, New Dundee, Norwich, Orono, Oshawa, Owen Sound, Paris, Picton, Port Hope, Port Rowan, Queenston, St. George, Simcoe, Stirling, Stoney Creek, Thedford, Trenton, Wellington, Whitby, Williamstown, Williamsburg, Woodstock, Wyoming.

These meetings have become very popular throughout the Fruit Growing districts. In several instances these Courses lasted for one day only, but generally they covered two and three days. The total attendance at the above mentioned Courses was 10,121.

Judging Classes.

Short Courses in Seed and Stock Judging were conducted at the following places: — Avonmore, Aultsville, Belleville, Bolton, Bowmanville, Brampton, Brigden, Brooklin, Carp, Cannington, Chesterville, Cobourg, Cookstown, Creemore, Dutton, Elmvale, Essex, Holstein, Lanark Village, Lindsay, Madoc, Maxville, Martintown, Markdale, Millbrook, Mountain, Newmarket, North Gower, Norwood, Orillia, Pakenham, Peterboro, Picton, Port Perry, Ridgeway, Silverdale, Simcoe, Smith's Falls, Thamesville, Waterloo, Warkworth, Woodstock.

This work is very popular in every live stock section of the Province. The number of courses was increased from 25 to 42, and we are planning to conduct about 65 during the coming fall and winter months. The total attendance at these classes was 38,850.

Annual Meetings.

Speakers were furnished for 34 annual meetings of Farmers' Institutes, held between May 31 and June 28, 1911. At a number of these meetings demonstrations in Live Stock Judging were held and met with approval by all who attended. With very few exceptions the speakers were members of the Ontario Agricultural College Staff. The Institutes appreciate very much the services of these gentlemen, and we feel that it is important that the College be brought in close touch with the farmers of the Province.

Dairy Meetings.

A special series of meetings was conducted through the Dairy Instruction Branch. These meetings were attended by the two Chief Instructors, Messrs. G. G. Publow, Kingston, and Frank Herns, London, and some of the Dairy Instructors under their direction.

In all 257 factory meetings and 19 district meetings were held, with a total attendance of 13,606.

Special Northern Meetings.

The special meetings held throughout the Northern portion of the Province, and which were attended by a gentleman and a lady speaker, are recorded in Part II. of the 1911 Women's Institute Report. In all 107 places were visited. We are glad to report an increased interest in the meetings, and are planning to extend the work in this section of the Province.

Better Farming Special.

For the first time in the history of Ontario Institute work, instruction was given from a train consisting of three baggage cars and three coaches used for lecture purposes. The former were equipped with exhibits of fruit, dairy products, seeds, clovers, etc., as well as apparatus used in pruning, spraying, packing of fruit, cooling of milk, manufacturing of butter on the farm, appliances for taking levels in drainage work, etc., etc.

Among the topics discussed were the following: "The feeding of stock," "Making of butter on the farm," "Care of milk and cream for factories and creameries," "Choosing of varieties for orchards," "Care of orchards—pruning, spraying,

insect pests and fungus diseases," "Packing of fruit," Growing of corn," "Seed improvement," "Growing of alfalfa," "Tile drainage," "Poultry raising," "Small fruits," etc.

The places and dates of stops were as follows:—

Tuesday, February 28th.

Essex, 8.30 a.m.	Leamington, 1.00 p.m.
Comber, 10.30 a.m.	Fletcher, 3.30 p.m.

Wednesday, March 1st.

Charing Cross, 8.30 a.m.	Rodney, 1.00 p.m.
Ridgetown, 10.35 a.m.	Dutton, 3.00 p.m.

Thursday, March 2nd.

Muncey, 8.30 a.m.	Walkers, 1.00 p.m.
Melbourne, 10.25 a.m.	Alvinston, 3.00 p.m.

Friday, March 3rd.

Inwood, 8.30 a.m.	Petrolea, 1.00 p.m.
Oil Springs, 10.35 a.m.	Brigden, 3.10 p.m.

Tuesday, March 7th.

Kingsmill, 8.30 a.m.	Brownsville, 1.00 p.m.
Springfield, 10.25 a.m.	Tillsonburg, 3.00 p.m.

Wednesday, March 8th.

Hawtrey, 8.30 a.m.	Waterford, 1.00 p.m.
Wyndham, 10.25 a.m.	Villa Nova, 3.00 p.m.

Thursday, March 9th.

Hagersville. 8.30 a.m.	Canfield, 1.00 p.m.
Cayuga, 10.25 a.m.	Attercliffe, 3.00 p.m.

Friday, March 10th.

Perry, 8.30 a.m.	St. Davids, 1.00 p.m.
Welland, 10.25 a.m.	Niagara-on-the-Lake, 3.00 p.m.

This work proved most interesting, and many words of appreciation have been received from various sources. There was marked evidence during the past summer of the beneficial influence of the instruction given throughout the districts covered. The total attendance in the eight days was something over 8,000.

This feature of instruction was made possible through the liberality of the Michigan Central Railroad, which placed a fully equipped train at the disposal of the Department of Agriculture free of cost. Since the practicability and value of the work has been so well demonstrated, it is hoped that other lines will co-operate with the Department in an extension of the work.

Summary of Attendance.

At Regular, Supplementary, and Special Institute Meetings for the twelve months ending June 30, 1911:—

Regular and Supplementary Meetings:	
Farmers' Institutes	105,576
Women's Institutes	151,654
Special Institutes:	
Better Farming Special	8,500
Fruit Institutes	10,121
Seed and Live Stock Judging Classes	38,850
Factory and Creamery Meetings	13,606
Total	328,307

Postponement of Meetings.

Plans were made early in the Fall for the holding of a number of meetings in the latter part of November and December. The decision on the part of the Government to hold the Provincial Elections in December, made it necessary to re-arrange many of the lists, and to plan for the meetings which were at first arranged for November and December to be held in February. It was the unanimous opinion of those consulted that it would be unwise to hold meetings near the time of elections.

We trust that Institute officers will lend their hearty co-operation to make the winter meetings more than usually successful.

Geo. A. Putnam,
Superintendent.

Toronto, Ontario.
Nov., 1911.

REPORTS OF LOCAL FARMERS' INSTITUTES

INSTITUTE DISTRICT.	Membership for year ending December, 1910.	Membership for six months ending June, 1911.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.				
						Cash on hand per last report.	Members' fees.	Grants.	Receipts from conventions and excursions.	Miscellaneous.
						$ c.	$ c.	$ c.	$ c.	$ c.
1 Addington	71	68	8	352	22	6 27	17 00	55 00	.....	.....
2 Algoma, Centre	66	81	5	379	18	129 01	20 75	55 00	.....	.....
3 Algoma, East	107	131	8	687	12	27 92	25 00	30 00	28 20	.....
4 Algoma, North Shore	86	64	16	729	26	31 54	17 50	30 00	8 75	.....
5 Amherst Island	12	13	4	102	4	49 02	3 25	80 00	.....	.....
6 Brant, North	344	167	22	990	51	155 23	40 50	80 00	74 95	.....
7 Brant, South	295	316	10	1265	18	48 41	77 00	55 00	169 15	3 75
8 Bruce Centre	143	139	13	1200	29	219 16	35 50	55 00	86 50	.....
9 Bruce, North	248	269	11	556	22	98 72	39 25	55 00	27 87	20
10 Bruce, South	209	251	9	2230	12	32 83	43 00	55 00	75 00	4 00
11 Bruce, West	291	267	12	942	22	154 53	66 75	55 00	77 38	.....
12 Carleton	372	504	6	642	21	.....	93 00	105 00	.....	.....
13 Dufferin	330	230	13	1029	53	75 16	77 25	55 00	91 90	4 82
14 Dundas	381	253	9	1165	21	172 84	63 75	54 85	74 30	7 21
15 Durham, East	244	268	15	903	35	123 36	66 75	55 00	46 00	1 25
16 Durham, West	200	234	10	824	25	217 13	58 25	55 00	66 25	3 30
17 Elgin, East	287	276	13	570	28	220 76	68 00	55 00	84 00	37 34
18 Elgin, West	119	243	6	715	27	.....	62 75	55 00	.....	2 50
19 Essex, North	130	125	7	655	26	47 85	31 25	55 00	.....	.....
20 Essex, South	205	235	13	877	25	57 62	60 25	55 00	.....	62
21 Frontenac	98	111	13	799	24	49 87	29 25	55 00	.....	.....
22 Frontenac, Centre	107	46	5	225	14	22 78	5 40	55 00	.....	.....
23 Glengarry	308	364	12	1870	33	45 44	91 00	55 00	.....	.....
24 Grenville, South	109	112	10	558	22	3 24	28 50	55 00	.....	.....
25 Grey, Centre	236	236	12	1767	24	.....	53 30	55 00	122 80	12 20
26 Grey, North	331	303	19	1318	33	143 46	76 75	55 00	66 09	3 27
27 Grey, South	202	191	13	1410	27	41 58	48 00	55 00	166 50	114 00
28 Haldimand	281	234	9	1740	18	.....	51 75	55 00	128 50	.....
29 Halton	803	401	9	1635	18	239 26	92 80	55 00	219 20	68 31
30 Hastings, East	132	126	9	764	21	.....	31 00	55 00	.....	5 00
31 Hastings, North	184	454	7	510	14	15	116 00	55 00	.....	.....
32 Hastings, West	94	102	13	661	25	4 61	24 50	80 00	.....	.....
33 Huron, East	372	358	12	2423	52	139 38	91 50	55 00	19 55	4 76
34 Huron, South	193	186	14	1345	19	3 88	45 00	80 00	84 80	.....
35 Huron, West	168	132	17	1132	55	3 07	41 75	55 00	71 00	75
36 Kent, East	282	301	9	1222	36	82 53	74 00	55 00	.....	8 80
37 Kent, West	242	219	25	679	36	54 28	54 50	55 00	.....	.....
38 Lambton, East	316	479	24	2880	68	1 00	119 00	55 00	35 57	.....
39 Lambton, West	431	461	12	1905	46	96 00	123 75	55 00	35 57	23 18
40 Lanark, North	69	30	6	349	12	2 50	12 00	55 00	.....	1 73
41 Lanark, South	144	117	6	524	32	.....	18 00	55 00	.....	8 40
42 Leeds, N., & Grenville	159	120	15	704	30	.....	30 50	80 00	.....	.....
43 Leeds, South	211	170	7	1161	25	.....	41 75	55 00	.....	.....
44 Lennox	113	125	14	541	25	61 13	31 25	55 00	.....	.....
45 Lincoln	251	195	7	1650	35	112 60	45 50	60 00	33 85	.....
46 Manitoulin, East	136	94	11	928	22	35 53	22 00	30 00	.....	11 55
47 Manitoulin, West	94	106	5	675	10	.....	10 50	20 00	.....	.....
48 Middlesex, East	313	291	9	1527	39	85 14	64 00	55 00	89 95	.....
49 Middlesex, North	236	341	19	2406	35	.....	82 50	55 00	.....	5 00
50 Middlesex, West	193	165	7	753	26	81 31	43 00	55 00	59 10	.....
51 Monck	237	208	10	1232	33	11 56	51 00	50 00	.....	.....
52 Muskoka, Centre	83	69	6	205	10	9 41	17 00	30 00	.....	.....
53 Muskoka, North	162	168	16	425	36	13 01	39 25	30 00	.....	1 50
54 Muskoka, South	92	68	.....	.....	.....	3 20	18 00	30 00	.....	5 53
55 Port Carling	37	37	2	167	4	43	8 80	.....	.....	.....

FOR YEAR ENDING JUNE 30TH, 1911.

Balance due Treasurer.	Total receipts.	Expenditure.										No.
		Due Treasurer per last report.	Expense for meetings.	Officers' and Secretary's salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' expenses, and wages.	Periodicals for members.	Miscellaneous.	Total expenditure.	Balance on hand.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	78 27	.....	19 50	20 00	7 80	11 75	3 00	.....	7 00	69 05	9 22	1
.....	204 76	.....	3 00	21 00	1 60	5 75	28 00	.....	12 90	72 25	132 51	2
.....	111 12	.....	3 00	30 00	6 50	9 00	18 00	.....	.....	66 50	44 62	3
.....	87 79	.....	6 50	15 00	2 60	8 75	16 50	.....	7 13	56 48	31 31	4
.....	132 27	.....	4 25	.....	.....	1 93	.....	.....	.....	6 18	126 09	5
.....	350 68	.....	53 65	40 00	5 85	32 85	29 75	.....	74 90	237 00	113 68	6
.....	353 31	.....	47 90	50 00	1 73	43 35	10 00	.....	118 60	271 58	81 73	7
.....	396 16	.....	47 50	71 35	5 00	23 80	6 00	.....	14 40	168 05	228 11	8
.....	221 04	.....	22 50	30 00	13 26	12 80	7 15	.....	47 15	132 86	88 18	9
.....	209 83	.....	75 15	40 00	17 00	31 19	.....	.....	2 20	165 54	44 29	10
.....	353 66	.....	4 75	44 25	8 78	10 50	23 50	55 75	36 78	184 31	169 35	11
.....	198 00	3 31	14 40	50 00	6 75	14 50	.....	.....	50 00	138 96	59 04	12
.....	304 13	.....	45 35	59 90	6 09	16 70	30 75	.....	.....	158 79	145 34	13
.....	372 95	.....	15 50	50 00	4 13	19 50	6 05	.....	5 00	100 18	272 77	14
.....	292 36	.....	11 50	69 25	6 85	27 00	9 85	.....	20 00	144 45	147 91	15
.....	399 93	.....	9 75	112 00	1 72	51 10	5 90	.....	16 50	196 97	202 96	16
.....	465 10	.....	30 75	36 20	1 34	32 85	14 75	.....	18 00	133 89	331 21	17
.....	120 25	7 40	10 40	25 00	6 00	12 25	19 65	.....	.....	80 70	39 55	18
.....	134 10	.....	4 00	37 40	3 00	12 50	15 40	.....	.....	72 30	61 80	19
.....	173 49	.....	30 05	27 00	8 50	7 35	5 70	.....	8 10	86 70	86 79	20
.....	134 12	.....	9 00	20 00	3 00	25 60	5 20	.....	.....	62 80	71 32	21
.....	83 18	.....	7 95	27 00	12 50	4 75	.....	.....	8 00	60 20	22 98	22
.....	191 44	.....	18 50	53 75	7 25	35 45	10 10	.....	16 10	141 15	50 29	23
.....	86 74	.....	3 00	32 50	2 36	11 13	11 65	.....	11 95	72 59	14 15	24
.....	243 30	23 16	126 80	41 25	3 74	16 35	6 00	.....	12 11	229 41	13 89	25
.....	344 57	.....	67 55	58 90	9 26	25 95	5 25	.....	15 50	182 41	162 16	26
.....	425 08	.....	51 75	89 65	7 40	59 40	11 70	117 65	29 02	366 57	58 51	27
.....	235 25	3 50	44 45	77 20	9 90	20 50	27 00	.....	6 90	189 45	45 80	28
.....	674 57	.....	61 25	85 00	15 00	40 06	60 00	.....	69 20	330 51	344 06	29
9 87	100 87	14 47	27 60	35 00	7 05	13 00	3 75	.....	.....	100 87	.....	30
.....	171 15	.....	41 50	60 00	6 00	15 00	15 50	.....	10 00	148 00	23 15	31
.....	109 11	.....	8 50	30 00	5 60	5 25	9 50	.....	.....	58 85	50 26	32
.....	310 19	.....	59 20	62 00	6 24	23 00	44 00	.....	10 00	204 44	105 75	33
.....	213 68	.....	35 00	37 58	4 95	44 10	32 10	2 25	65	156 63	57 05	34
.....	171 57	.....	62 55	62 00	8 00	16 00	.....	.....	5 00	153 55	18 02	35
.....	220 33	.....	.....	47 69	4 92	16 44	31 00	.....	.....	100 05	120 28	36
.....	163 78	.....	58 50	37 03	8 90	10 66	16 00	.....	5 00	136 09	27 69	37
.....	210 57	.....	39 00	63 90	9 52	34 70	54 50	.....	6 82	208 44	2 13	38
.....	333 50	.....	21 25	81 60	8 15	40 03	62 65	.....	54 06	267 74	65 76	39
.....	71 23	.....	20 55	35 00	50	6 50	6 00	.....	55	69 10	2 13	40
.....	81 40	4 08	14 75	25 00	2 00	19 75	12 00	.....	.....	77 58	3 82	41
15 98	126 48	69 98	29 00	10 00	5 50	7 00	.....	.....	5 00	126 48	.....	42
20 50	117 25	18 70	56 30	22 25	1 75	12 25	6 00	.....	.....	117 25	.....	43
.....	147 38	.....	19 00	15 00	4 35	13 00	8 50	.....	.....	59 85	87 53	44
.....	251 95	.....	10 00	30 00	4 96	53 04	10 30	.....	30 00	138 30	113 65	45
.....	99 08	.....	.....	12 00	64	4 25	27 50	.....	60	44 99	54 09	46
.....	30 50	1 31	.....	15 00	65	2 50	.....	.....	1 00	20 46	10 04	47
.....	294 09	.....	100 95	40 00	10 45	32 49	24 00	14 50	18 80	240 84	53 25	48
.....	142 50	23 49	27 25	40 95	7 30	16 25	25 15	.....	.....	140 39	2 11	49
.....	238 41	.....	28 20	32 00	4 23	20 40	23 10	.....	.....	107 93	130 48	50
.....	112 56	.....	14 25	27 00	6 25	14 65	27 85	.....	1 70	91 70	20 86	51
.....	56 41	.....	12 58	12 00	1 35	8 65	.....	.....	12 80	47 38	9 03	52
.....	83 76	.....	11 00	33 75	3 16	11 95	9 00	60	12 30	81 76	2 00	53
.....	56 73	.....	.....	20 00	1 50	7 25	.....	.....	5 00	33 75	22 98	54
.....	9 23	.....	.....	.....	1 78	2 75	.....	.....	10	4 63	4 60	55

REPORTS OF LOCAL FARMERS' INSTITUTES

INSTITUTE DISTRICT.	Membership for year ending December, 1910.	Membership for six months ending June, 1911.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts. Cash on hand per last report.	Members' fees.	Grants.	Receipts from conventions and excursions.	Miscellaneous.
						$ c.	$ c.	$ c.	$ c.	$ c.
56 Nipissing, E. & W...	24	49	9	382	18	1 60	4 50	30 00	.....	.....
57 Norfolk, North.....	282	237	9	1,143	17	9 41	64 50	55 00	94 74	.....
58 Norfolk, South.....	149	140	13	495	15	.....	31 50	55 00	37 95	.....
59 Northumberland, E..	177	190	12	1,105	28	17 25	48 25	55 00	.....	.....
60 Northumberland, W.	374	265	12	1,115	19	53 97	64 00	96 00	2 49	3 40
61 Ontario, North	402	285	21	1,286	36	11 70	76 50	54 85	153 25	4 50
62 Ontario, South	258	190	17	1,165	51	70 09	53 00	55 00	87 82	....
63 Oxford, North	278	257	18	1,435	46	12 33	63 75	55 00	117 15	4 75
64 Oxford, South	429	364	18	1,670	42	20 34	95 75	55 00	50 24	1 00
65 Parry Sound, East..	157	17	27	1,291	54	70 24	31 25	30 00	140 90	.....
66 Parry Sound, West..	59	120	9	206	18	.....	30 25	.....	.....	.....
67 Peel	401	285	16	1,544	34	13 54	90 00	105 00	173 15	14 50
68 Perth, North.....	493	401	10	1,980	20	113 23	99 25	60 00	145 40	32 80
69 Perth, South.....	462	388	11	2,290	47	179 17	97 50	60 00	142 70	11 47
70 Peterboro,East.....	114	143	13	1,832	44	30 84	35 25	55 00	46 00	25
71 Peterboro, West	168	165	7	848	43	68 34	41 50	55 00	46 00	.....
72 Prescott.....	99	139	5	408	12	86 64	34 75	55 00	.....	.....
73 Prince Edward.....	140	169	7	828	31	75 83	42 25	55 00	.....	4 74
74 Rainy River, South..	64	56	1	16	.....	5 81	14 75	30 00	.....	8 00
75 Renfrew, North	72	52	9	485	8	10 29	12 75	55 00	.....	.....
76 Renfrew, South	115	.....	11	515	30	138 36	29 25	55 00	57 35	54
77 Simcoe, Centre.....	424	380	25	1,235	62	172 77	68 40	55 00	202 50	.....
78 Simcoe, East.....	232	133	10	321	22	104 43	30 75	30 00	28 58	11 95
79 Simcoe, South	195	140	13	604	28	10 52	34 75	55 00	.....	.....
80 Simcoe, West	267	214	7	1,445	29	39 35	49 00	30 00	158 80	.....
81 St. Joseph Island....	49	42	6	396	12	.....	11 25	46 26	.....	.....
82 Stormont	277	334	10	1,298	20	9 85	82 00	55 00	.....	.....
83 Thunder Bay	70	58	9	567	18	3 52	8 50	50 00	.....	5 00
84 Temiscaming	144	122	14	950	28	50 61	9 20	30 00	.....	.....
85 Victoria, East	178	171	7	1,307	25	19 86	44 50	55 00	8 10	16 23
86 Victoria, West.....	170	195	10	1,019	39	29 30	56 75	55 00	85 15	16 88
87 Waterloo, North	596	503	11	2.155	41	.....	115 00	55 00	90 55	10 00
88 Waterloo, South	530	393	14	1,510	33	25	104 50	55 00	100 95	7 50
89 Welland.....	283	223	10	887	38	270 68	53 75	30 00	136 15	.....
90 Wellington, Centre ..	400	120	16	1,175	53	.....	35 25	55 00	43 55	4 00
91 Wellington, East....	219	207	17	1,685	26	18 18	56 25	55 00	45 88	.....
92 Wellington, South ..	231	166	6	1,309	12	144 07	48 25	55 00	.....	9 75
93 Wellington, West....	244	154	6	1,368	27	104 75	41 75	55 00	107 90	.....
94 Union	105	155	7	996	13	60 50	39 50	42 50	58 45	2 40
95 Wentworth, North ..	242	227	17	1,616	30	43 31	57 00	55 00	.....	2 75
96 Wentworth, South ..	152	203	9	1,885	18	.....	63 25	30 00	.....	.....
97 York, East....	278	243	15	812	27	.....	63 50	80 00	73 35	2 00
98 York, North	349	466	19	1,555	45	68 11	116 25	55 00	168 30	1 58
99 York, West	161	200	9	1,195	34	.....	52 50	80 00	85 10	.....
						$	$	$	$	$
Total	22,072	20,215	1,133	105576	2,791	5,353	5,002	5,249	4,731	515 00

FOR YEAR ENDING JUNE 30TH, 1911—Continued.

Balance due Treasurer.	Total receipts.	Expenditure.										No.
		Due Treasurer per last report.	Expense for meetings.	Officers' and Secretary's salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' expenses, and wages.	Periodicals for members.	Miscellaneous.	Total expenditure.	Balance on hand.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	36 10	.....	2 00	20 45	2 50	.....	6 00	.....	.....	30 95	5 15	56
.....	223 65	.....	47 00	50 00	7 25	32 30	18 00	.....	3 00	157 55	66 10	57
4 99	129 44	14 56	10 00	47 50	3 38	28 50	6 00	.....	19 50	129 44	.....	58
.....	120 50	.....	11 50	39 75	1 10	13 35	19 90	.....	.....	85 60	34 90	59
.....	219 86	.....	60 80	52 55	2 91	10 25	8 70	.....	17 85	153 06	66 80	60
.....	300 80	.....	25 00	130 75	11 24	56 00	51 65	.....	50	275 14	25 66	61
.....	265 91	.....	60 25	15 00	17 65	51 65	14 70	.....	.....	159 25	106 66	62
.....	252 98	.....	38 90	54 55	10 45	53 35	88 55	.....	50	246 30	6 68	63
.....	222 33	.....	33 00	43 40	3 52	54 20	25 75	.....	26 65	186 52	35 81	64
.....	272 39	.....	129 30	45 80	12 35	40 75	.....	.....	30	228 50	43 89	65
32 48	62 73	6 38	.....	42 35	1 50	12 50	.....	.....	.....	62 73	.....	66
33 12	429 31	.....	147 97	121 15	30 82	54 30	75 07	.....	.....	429 31	.....	67
.....	450 68	.....	187 45	49 95	13 20	79 65	14 50	.....	29 05	373 80	76 88	68
.....	490 84	.....	90 25	80 60	11 97	73 00	42 50	.....	11 80	310 12	180 72	69
.....	167 34	.....	27 20	37 05	4 25	22 50	1 50	.....	10 00	102 50	64 84	70
.....	210 84	.....	36 85	30 00	7 00	36 00	3 00	.....	.....	112 85	97 99	71
.....	176 39	.....	25 00	20 00	2 90	11 25	11 25	.....	5 05	75 45	100 94	72
.....	177 82	.....	28 25	26 50	1 96	30 05	27 05	.....	6 00	119 81	58 01	73
.....	58 56	.....	.....	15 00	1 35	15 75	1 50	.....	2 50	36 10	22 46	74
.....	78 04	.....	10 55	26 75	6 25	16 25	.....	.....	.....	59 80	18 24	75
.....	280 50	.....	11 00	44 85	4 83	59 75	15 40	.....	5 00	140 83	139 67	76
.....	498 67	.....	136 00	71 25	11 75	25 50	11 25	.....	.....	255 75	242 92	77
.....	205 71	.....	43 80	39 65	2 30	30 70	.....	.....	13 25	129 70	76 01	78
.....	100 27	.....	15 00	27 75	3 60	12 75	6 75	.....	1 65	67 50	32 77	79
.....	277 15	.....	91 10	25 00	8 00	8 45	6 25	15 00	.....	153 80	123 35	80
.....	57 51	4 54	.....	25 00	3 00	5 25	.....	.....	3 90	41 69	15 82	81
.....	146 85	.....	42 50	25 00	6 50	34 00	20 50	.....	10 85	139 35	7 50	82
.....	67 02	.....	33 70	4 65	.....	5 75	.....	.....	.....	44 10	22 92	83
.....	89 81	.....	.....	.....	.....	3 50	21 78	.....	.....	25 28	64 53	84
.....	143 69	.....	31 53	20 00	3 46	18 50	21 75	.....	.....	95 24	48 45	85
.....	243 08	.....	43 55	25 00	15 90	48 75	4 70	18 00	62 17	218 07	25 01	86
30 50	301 05	62 65	39 80	102 75	12 75	23 00	49 55	.....	10 55	301 05	.....	87
.....	268 20	.....	108 67	120 00	29 15	.....	.....	.....	60	258 42	9 78	88
.....	490 58	.....	84 75	56 55	5 00	20 97	20 50	.....	10 45	198 22	292 36	89
51 74	189 54	33 64	25 35	86 10	4 95	21 50	4 50	.....	13 50	189 54	.....	90
.....	175 31	.....	22 00	48 70	8 75	24 10	9 60	.....	31 05	144 20	31 11	91
.....	257 07	.....	9 15	58 50	10 25	26 30	.....	.....	94 75	198 95	58 12	92
.....	309 40	.....	44 15	37 30	8 68	32 71	10 00	.....	16 36	149 20	160 20	93
.....	203 35	.....	23 70	25 80	6 00	11 35	8 40	.....	11 00	86 25	117 10	94
.....	158 06	.....	44 30	42 60	5 73	18 18	4 50	.....	75	115 46	42 60	95
13 89	107 14	31 83	34 40	15 15	8 40	12 36	.....	.....	5 00	107 14	.....	96
.....	218 85	20 78	27 70	55 93	10 13	38 50	15 87	.....	.....	168 91	49 94	97
.....	409 24	.....	40 00	57 35	14 44	6 82	28 15	46 50	36 10	229 36	179 88	98
.....	217 60	31 72	11 50	87 35	7 50	46 50	9 60	.....	16 50	210 67	6 93	99
$	$	$	$	$	$	$	$	$	$	$	$	
213	21,063	375	3,482	4,251	655	2,302	1,520	270	1,263	14,118	6,945	

ONTARIO FARMERS' INSTITUTES

OFFICERS FOR 1911-12.

Institute.		Name.	P. O. Address.
Addington	President	A. N. Lapum	Centreville.
	Vice-President	J. Mortimer Lochhead	Centreville.
	Secretary-Treasurer	J. B. Aylesworth	Newburgh.
Algoma, Centre	President	Henry Knight, Jr.	Sault Ste. Marie.
	Vice-President	Geo. W. Hill	Sault Ste. Marie.
	Secretary-Treasurer	J. A. Moore	Box 126, Steelton.
Algoma, East	President	A. I. Hopkins	Livingstone Creek
	Vice-President	David Bird	Dayton.
	Secretary-Treasurer	A. H. Hagen	Sowerby.
Algoma, North Shore	President	James Junor	MacLennan.
	Vice-President	Alex. McCluskie	MacLennan.
	Secretary-Treasurer	James Nott	MacLennan.
Amherst Island	President	Henry Filson	Stella.
	Vice-President	Robt. Kilpatrick	Stella.
	Secretary-Treasurer	W. F. Tugwell	Stella.
Brant, North	President	W. C. Good	Brantford.
	Vice-President	Frank Kitchen	St. George.
	Secretary-Treasurer	A. W. Vansickle	Onondaga.
Brant, South	President	A. E. Wesbrook	Oakland.
	Vice-President	Geo. Morris	Hatchley.
	Secretary-Treasurer	Fred. E. Malcolm	Mohawk.
Bruce, Centre	President	W. R. McDonald	Ripley.
	Vice-President	J. S. Bowers	Ripley.
	Secretary-Treasurer	R. J. Nelson	Paisley.
Bruce, North	President	J. K. Livingstone	Hepworth.
	Vice-President	Wm. Laidlaw	Lion's Head.
	Secretary-Treasurer	Cecil Swale	Wiarton.
Bruce, South	President	W. A. Rawand	Walkerton.
	Vice-President	Kenneth McKenzie	Teeswater.
	Secretary-Treasurer	James A Lamb	Walkerton.
Bruce, West	President	Henry Ball	Allenford.
	1st Vice-President	W. A. Mitchell	Pt. Elgin.
	2nd Vice-President	Alex. McCannel	Burgoyne.
	Secretary-Treasurer	J. H. Wismer	Pt. Elgin.
Carleton	President	Geo. R. Bradley	Carsonby.
	Vice-President	Geo. Hopper	Merivale.
	Secretary-Treasurer	H. H. Grant	Hazeldean.
Dufferin	President	W. J. Hamilton	Whittington.
	1st Vice-President	Rice Hill	Whitfield.
	2nd Vice-President	R. H. Galbraith	Shelburne.
	Secretary-Treasurer	Wm. Shields	Shelburne.
Dundas	President	Josiah Render	Van Camp.
	Vice-President	J. W. McCormick	Morewood.
	Secretary-Treasurer	J. P. Fox	Winchester.
Durham, East	President	J. Arthur Vance	Ida.
	Vice-President	H. C. Leslie	Canton.
	Secretary-Treasurer	A. J. Fallis	Millbrook.
Durham, West	President	M. J. Werry	Tyrone.
	Vice-President	Thos. Cowan	Orono.
	Secretary-Treasurer	W. E. Pollard	Bowmanville.
Elgin, East	President	James H. Sheppard	Luton.
	Vice-President	R. A. Penhale	Box 247, St. Thomas.
	Secretary-Treasurer	F. Leeson	Aylmer.
Elgin, West	President	D. Brown	Iona.
	Vice-President	W. A. Kelly	Aldboro.
	Secretary-Treasurer	J. E. Pearce	Wallacetown.
Essex, North	President	Dennis Rocheleau	Tecumseh.
	Vice-President	R. Kinister	Ruscom.
	Secretary-Treasurer	D. Ure	North Pelton.

Institute.		Name.	P. O. Address.
Essex, South	President	L. C. Palmer	Kingsville.
	Vice-President	Philip C. Fox	Ruthven.
	Secretary-Treasurer	G. W. Coatsworth	Kingsville.
Frontenac	President	J. L. F. Sproule	Westbrooke.
	Vice-President	Elmer Woodman	Wolfe Island.
	Secretary-Treasurer	J. B. Quinn	Dufferin.
Frontenac, Centre	President	J. E. Price	Mountain Grove.
	Vice-President	Walter Barr	Mountain Grove.
	Secretary-Treasurer	R. A. Hamilton	Hinchinbrooke.
Glengarry	President	Peter Chisholm	Lochiel.
	Vice-President	Geo. Wightman	Lancaster.
	Secretary-Treasurer	J. P. McNaughton	Dominionville.
Grenville, South	President	Wm. Wallace	Shanly.
	Vice-President	E. D. Perrin	Maynard.
	Secretary-Treasurer	G. W. Carson	Charleville.
Grey, Centre	President	J. R. Fawcett	Kimberley.
	Vice-President	A. Kentner	Thornbury.
	Secretary-Treasurer	J. I. Graham	Vandeleur.
Grey, North	President	Wm. Bunt	Kemble.
	Vice-President	Malcolm Rutherford	Leith.
	Secretary-Treasurer	A. S. Donald	Kilsyth.
Grey, South	President	John R. Philp	Maple Lane.
	Vice-President	William S. Scarf	Durham.
	Secretary-Treasurer	Geo. Binnie	Bunessan.
Haldimand	President	Albert Snell	Hagersville.
	Vice-President	R. E. King	Decewsville.
	Secretary-Treasurer	W. S. Dunnett	Lythmore.
Halton	President	W. A. Wilson	Georgetown.
	Vice-President	N. F. Lawrence.	Sheridan.
	Secretary-Treasurer	E. F. Nixon	Ashgrove.
Hastings, East	President	J. H. Clare	Chapman.
	Secretary-Treasurer	H. S. Tucker	Chapman.
Hastings, North	President	Joseph English	Moira.
	Vice-President	W. E. Lummon	Crookston.
	Secretary-Treasurer	F. A. Comerford	Eldorado.
Hastings, West	President	S. W. Lloyd	Belleville.
	1st Vice-President	Alex. Park	Stirling.
	2nd Vice-President	Clem. H. Ketcheson	Wallbridge.
	Secretary-Treasurer	T. H. Ketcheson	Frankford.
Huron, East	President	Thos. McMillan	Seaforth.
	1st Vice-President	W. H. Fraser	Bluevale.
	2nd Vice-President	Anson Smith	Trowbridge.
	Secretary-Treasurer	P. A McArthur	Brussels.
Huron, South	President	J. T. Allison	Thames Road.
	Vice-President	Jno. Elder	Hensall.
	Secretary-Treasurer	B. S. Phillips	Exeter.
Huron, West	President	Joseph A. Mallough	Dungannon.
	Vice-President	James Linklater	Dunlop.
	Secretary-Treasurer	Wm. Bailie	Dungannon.
Kent, East	President	A. E. Pickard	Kent Bridge.
	Vice-President	F. L. Arnold	Kent Bridge.
	Secretary-Treasurer	E. C. McGeachy	Thamesville.
Kent, West	President	F. W. Charteris	Chatham.
	Vice-President	Harvey Imrie	Wheatley.
	Secretary-Treasurer	J. R. Longmoore	Rhodes.
Lambton, East	President	John Forbes	Kertch.
	Vice-President	James Armstrong	Alvinston.
	Secretary-Treasurer	E. F. Augustine	Aughrim.
Lambton, West	President	J. M. Webster	Rutherford.
	Vice-President	Jno. A. McBean	Brigden.
	Secretary-Treasurer	Robt. J. White	Colinville.
Lanark, North	President	James Currie	Lammermoor.
	Vice-President	Archie Rankin	Middleville.
	Secretary-Treasurer	James Park	Poland.

Institute.		Name.	P. O. Address.
Lanark, South	President	J. W. Leaver	Perth.
	Vice-President	James Glenn	Perth.
	Secretary-Treasurer	Geo. Oliver	Perth.
Leeds, N., & Grenville	President	R. H. Earl	Merrickville.
	Vice-President	F. F. Bishop	Bishop's Mills.
	Secretary-Treasurer	G. L. Telford	Merrickville.
Leeds, South	Hon. President	Chas. MacDonald	Gananoque.
	President	W. M. Bass	Newboro.
	Vice-President	C. F. Rath	Lansdowne.
	Secretary-Treasurer	Freeman Britton	Gananoque.
Lennox	President	M. N. Empey	Napanee.
	Vice-President	Ira B. Hudgins	Selby.
	Secretary	Manly Jones	Napanee.
	Treasurer	W. N. Dollar	Napanee.
Lincoln	President	Robt. Thompson	St. Catharines.
	Vice-President	W. B. Rittenhouse	Beamsville.
	Secretary-Treasurer	J. Pawling	Pt. Dalhousie.
Manitoulin, East	President	Wm. Hare	Sandfield.
	Vice-President	W. B. Snow	Snowville.
	Secretary-Treasurer	Jas. P. Dunlop	Sheguindah.
Manitoulin, West	President	John Jennings	Barrie Island.
	Vice-President	Fred. Smith	Gore Bay.
	Secretary-Treasurer	W. O. Rummals	Barrie Island.
Middlesex, East	President	Jos. N. Duffin	Rebecca.
	Vice-President	R. H. Scott	Vanneck.
	Secretary-Treasurer	Jas. H. Wheaton	Thorndale.
Middlesex, North	President	D. A Graham	Lobo.
	Vice-President	Malcolm Veitch	Parkhill.
	Secretary-Treasurer	R. R. Cameron	Ailsa Craig.
Middlesex, West	President	A. B. McDonald	Appin.
	Vice-President	E. F. Reycraft	Pratt Siding.
	Secretary-Treasurer	Chas. M. Macfie	Appin.
Monck	President	F. Mingle	St. Ann's.
	Vice-President	John Hill	Canboro.
	Secretary-Treasurer	J. E. Cohoe	Wellandport.
Muskoka, Centre	President	Alfred Kay	Port Sydney.
	Vice-President	E. Hamilton	Raymond.
	Secretary-Treasurer	J. H. Osborne	Utterson.
Muskoka, North	President	A. Sproat	Aspdin.
	Vice-President	Samuel Robson	Birkendale.
	Secretary-Treasurer	F. A. Emberson	Hillside.
Muskoka, South	President	J. J. Beaumont	Bracebridge.
	Vice-President	Albert Goltz	Bardsville.
	Secretary-Treasurer	Alex. Barron	Bracebridge.
Port Carling	President	Jos. McCully	Port Carling.
	Vice-President	Chas. H. Davidson	Brackenrig.
	Secretary-Treasurer	Jno. Davidson	Brackenrig.
Nipissing, West	President	Onesime Larocque	North Bay.
	Vice-President	Albert Depenser	North Bay.
	Secretary-Treasurer	W. J. Simmons	Feronia.
Norfolk, North	President	L. C. McConnell	Delhi.
	1st Vice-President	Geo. Erwin	Tyrrell.
	2nd Vice-President	Albert Cowan	Courtland.
	Secretary-Treasurer	Albert Swinn	Mabee.
Norfolk, South	President	Abram Neilson	Walsh.
	Vice-President	Eph. Tisdale	Carholme.
	Secretary-Treasurer	E. S. Palmerston	Walsh.
Northumberland, East	President	Milton Maybee	Trenton.
	Vice-President	T. F. Moran	Codrington.
	Secretary-Treasurer	H. S. Aylesworth	Norham.
Northumberland, West	President	W. J. Westington	Plainville.
	Vice-President	Robt. Campbell	Roseneath.
	Secretary-Treasurer	Thos. Hoskins	The Gully.

Institute.		Name.	P. O. Address.
Ontario, North	President	Walter S. Lapp	Uxbridge.
	1st Vice-President	John Glendinning	Sunderland.
	2nd Vice-President	John McNabb	Brechin.
	Secretary-Treasurer	J. W. Widdifield	Uxbridge.
Ontario, South	President	Hugh Pugh	Whitevale.
	Vice-President	C. J. Stevenson	Brooklin.
	Secretary-Treasurer	R. H. Cronk	Pickering.
Oxford, North	President	W. E. Thomson	Woodstock.
	1st Vice-President	A. W. Harwood	Walmer.
	2nd Vice-President	W. C. Shearer	Bright.
	Secretary-Treasurer	F. W. Goble	Woodstock.
Oxford, South	President	C. W. Budd	Foldens.
	Vice-President	W. H. Chambers	Salford.
	Secretary-Treasurer	B. G. Palmer	Norwich.
Parry Sound, East	President	Jno. Paget,	Sundridge.
	Vice-President	Jas. Cole,	South River.
	2nd Vice-President	G. E. Gibbon	Sundridge.
	Secretary-Treasurer	Thos. Bottomley	South River.
Parry Sound, West	President	J. N. Haines	Parry Sound.
	Vice-President	John Hunt	Parry Sound.
	Secretary-Treasurer	Joseph Ryder	Parry Sound.
Peel	President	P. A. Campbell	Campbell Cross.
	1st Vice-President	Jas. Collins	Woodbill.
	2nd Vice-President	R. McCulloch	Snelgrove.
	Secretary-Treasurer	W. E. Shean	Burnhamthorpe.
Perth, North	President	J. M. McCallum	Shakespeare.
	Vice-President	H. Hemsworth	Wallace.
	Secretary-Treasurer	W. J. Spencer	Milverton.
Perth, South	President	William Dalrymple	Cromarty.
	Vice-President	James Morrison	St. Mary's.
	Secretary-Treasurer	Duncan MacVannel	St. Mary's.
Peterborough, East	President	F. Birdsall	Birdsall.
	Vice-President	E. Hawthorne	Warsaw.
	Secretary-Treasurer	Chas. O'Riley	Norwood.
Peterborough, West	President	J. H. Garbutt	Peterboro, box 921
	Vice-President	E. E. Moore	Peterboro.
	Secretary-Treasurer	Wm. Collins	242 Romaine St., Peterboro.
Prescott	President	James Allison	Stardale.
	1st Vice-President	Kenneth McRae	Vankleek Hill.
	2nd Vice-President	Chas. E. Byers	Stepney.
	Secretary-Treasurer	Wm. Macadam	Vankleek Hill.
Prince Edward	President	W. B. Leavens	Chisholm.
	Vice-President	P. N. Gilbert	Bloomfield.
	Secretary-Treasurer	Arnold M. Flatt	Picton.
Rainy River, South	President	C. W. Hughes	Box Alder.
	Vice-President	J. L. Locking	Emo.
	Secretary-Treasurer	T. A. Boucher	Emo.
Renfrew, North	President	Osborne Wright	Beachburg.
	Vice-President	Geo. Forbes	Beachburg.
	Secretary-Treasurer	Wm. Headrick	Beachburg.
Renfrew, South	President	John F. Blane	Renfrew.
	Vice-President	D. Muirhead	Renfrew.
	Secretary-Treasurer	G. MacIntyre	Renfrew.
Simcoe, Centre	President	C. M. Hickling	Barrie.
	Vice-President	Jas. McDermott	Elmvale.
	Secretary-Treasurer	Jas. Coutts	Midhurst.
Simcoe, East	President	Thos. Swindle	Ardtrea.
	Vice-President	C. H. Wilson	Hawkestone.
	Secretary-Treasurer	R. C. Hipwell	Orillia.
Simcoe, South	President	J. N. Morton	Lefroy.
	Vice-President	Jas. Stephens	Newton Robinson.
	Secretary-Treasurer	W. J. W. Lennox	Newton Robinson.

Institute.		Name.	P. O. Address.
Simcoe, West	Hon. President	John McKee	Duntroon.
	President	David Smith	Smithdale.
	1st Vice-President	John Smith	Duntroon.
	2nd Vice-President	Robt. Murray	Avening.
	Secretary-Treasurer	J. A. McDermid	Stayner.
St. Joseph Island	President	Joseph Frarey	Richard's Landing
	Vice-President	Edgar Hains	Richard's Landing
	Secretary-Treasurer	C. A. Young	Richard's Landing
Stormont	President	Isaiah McBride	Northfield Sta.
	Vice-President	A. W. McIntyre	Newington.
	Secretary-Treasurer	D. H. McDiarmid	Avonmore.
Temiskaming	President	Jno. Sharp	Liskeard.
	Vice-President	Thos. Norris	Thornloe.
	Secretary-Treasurer	W. A. Houser	Earlton.
Thunder Bay	President	D. C. Garver	Fort William.
	Vice-President	J. R. Hutchison	Fort William.
	Secretary-Treasurer	A. E. Babcock	Slate River Valley
Victoria, East	President	W. H. Cullis	Powles Corners.
	Vice-President	Isaac Fee	Mt. Pleasant.
	Secretary-Treasurer	Wm. Thurston	Bobcaygeon.
Victoria, West	President	Wm. Channon	Oakwood.
	Vice-President	Andrew McKay	Woodville.
	Secretary-Treasurer	Jas. Keith	Lindsay.
Waterloo, North	President	Josiah Stauffer	Waterloo.
	1st Vice-President	M. L. Weber	St. Jacobs.
	2nd Vice-President	Jas. H. Woods	Winterbourne.
	Secretary-Treasurer	Allen Shantz	Waterloo.
Waterloo, South	President	Walter Oliver	Branchton.
	Vice-President	Jas. Malone	Ayr.
	Secretary-Treasurer	Wm. Slater	Galt.
Welland	President	J. A. Zavitz	Brookfield.
	Vice-President	James McKeown	Chippawa.
	Secretary-Treasurer	W. H. Gainer	Welland.
Wellington, Centre	President	Wm. Thacker	Ponsonby.
	Vice-President	Jas. Kirkwood	Ospringe.
	Secretary-Treasurer	Geo. Wright	Elora.
Wellington, East	President	Alfred Hutchinson	Mt. Forest.
	Vice-President	Dan McQueen	Conn.
	Secretary-Treasurer	David S. Ferguson	Conn.
Wellington, South	Hon. President	William Scott	Eramosa.
	President	John Barber	Guelph.
	Vice-President	Samuel Young	Guelph.
	Secretary-Treasurer	G. B. Hood	Guelph.
Wellington, West	President	James Fotheringham	Palmerston.
	Vice-President	W. C. Quickfall	Glenallan.
	Secretary-Treasurer	E. G. Henry	Drayton.
Union	President	Alex. Drummond	Clifford.
	Vice-President	Jno. Pritchard	Redgrave.
	Secretary-Treasurer	John R. Scott	Clifford.
Wentworth, North	President	W. R. Flatt	Waterdown.
	1st Vice-President	D. W. Chambers	Freelton.
	2nd Vice-President	Geo. Robb	Sheffield.
	Secretary-Treasurer	Alfred Purnell	Puslinch.
Wentworth, South	President	Asa Choate.	N. Glanford.
	Vice-President	H. L. Beckett	Hamilton.
	Secretary-Treasurer	Erland Lee	Stoney Creek.
York, East	President	W. G. Rennie	Ellesmere.
	Vice-President	Wm. Doherty	Agincourt.
	Secretary-Treasurer	A. J. Reynolds	Scarboro Jct.
York, North	President	H. E. Ross	Strange.
	Vice-President	J. A. Rose	Mt. Albert.
	Secretary-Treasurer	T. J. Spaulding	Aurora.
York, West	President	A. T. Orth	Kleinburg.
	Vice-President	Ed. S. Stonehouse	Richview.
	Secretary-Treasurer	R. L. Crawford	Emery.

INSTITUTE MEETINGS AND DELEGATES THEREFOR.

1911-12.

It is usual to have afternoon and evening sessions at each place, the former at 1.30 or 2.00, and the latter at 7.30 or 8.00 o'clock. The exact hour of meeting is decided by the officers of the Institute concerned, and announcements made accordingly. "Aft." indicates an afternoon meeting only; "Evg." an evening meeting only.

REGULAR MEETINGS.

Division 1.

F. H. Silcox, Iona, Jan. 3 to 30.
C. E. Porter, Appleby, Jan. 11 to 18
J. C. Shaw, Norwich, Jan. 20 to 30
Mrs. W. B. Ferguson, Strathroy, Jan. 3 to 11.
Dr. Margaret McAlpine, Toronto, Jan. 18 and 19.

1	Durham, Town Hall	South Grey	Jan. 3
2	Hanover, Telford's Hall	South Grey	" 4
3	Wiarton, Town Hall	North Bruce (aft.)	" 5
4	Oliphant, School House	North Bruce (evg.)	" 5
5	Hepworth, Gate's School	North Bruce (aft.)	" 6
6	Hepworth, Spring Creek, School	North Bruce (evg.)	" 6
7	Parkhead, Orange Hall	North Bruce	" 8
8	Tara, Vandusen's Hall	West Bruce	" 9
9	Port Elgin, Town Hall	West Bruce	" 10
10	Walkerton, Township Hall	South Bruce, 2 days, Judg. Class, Jan. 11, 12	
11	Lavery's School House	Union	Jan. 13
12	Clifford, Town Hall	Union	" 15
13	Teeswater, Teeswater Township Hall	South Bruce, 2 days	Jan. 16, 17
14	Gorrie, Town Hall	East Huron	Jan. 18
15	Brussels, Town Hall	East Huron	" 19
16	Kintail, McDonald's Hall	West Huron	" 20
17	Dungannon, Elliott's Hall	West Huron	" 22
18	Acton, Town Hall	Halton	" 23
19	Ballinafad, Temperance Hall	Halton	" 24
20	Norval, Orange Hall	Halton	" 25
21	McCurdy's Cors., School House	Halton	" 26
22	Sheridan, Temperance Hall	Halton	" 27
23	Palermo	Halton	" 29
24	Nelson	Halton	" 30

Division 2.

D. James Thornhill, Jan. 3 to 27.
R. L. Moorehouse, Cairo, Jan. 3 to 18.
Mrs. W. B. Ferguson, Strathroy, Jan. 12 to 27.

1	Hawkesville, Farwell's Hall	North Waterloo	Jan. 3
2	Linwood, Schurr's Hall	North Waterloo	" 4
3	Milverton, Cook's Hall	North Perth	" 5
4	Shakespeare, Temperance Hall	North Perth	" 6
5	Mitchell, Town Hall	South Perth	" 8
6	St. Mary's, Town Hall	South Perth	" 9
7	Exeter, Town Hall	South Huron	" 10
8	Brucefield, Dixon's Hall	South Huron	" 11
9	Mt. Carmel, Mt. Carmel Hall	North Middlesex	" 12
10	Greenway, Wilson's Hall	North Middlesex	" 13
11	Parkhill, Town Hall	North Middlesex	" 15
12	West McGillivray, Town Hall	North Middlesex	" 16
13	Thorndale, Harding's Hall	East Middlesex	" 17
14	Harrietsville, I. O. F. Hall	East Middlesex	" 18
15	Alvinston, Council Chamber	East Lambton	" 19
16	Aughrim, Lower Aughrim Hall	East Lambton	" 20
17	Shetland, Town Hall	East Lambton	" 22
18	Inwood, Orange Hall	East Lambton	" 23

19	Petrolea, Town Hall	West Lambton	Jan.	24
20	Sarnia, Town Hall	West Lambton (aft.)	"	25
21	Bunyan, School House	West Lambton (evg.)	"	25
22	Beecher, Forester's Hall	West Lambton	"	26
23	Brigden, McKenzie's Hall	West Lambton	"	27

DIVISION 3.

James McDermott, Elmvale, Jan. 3 to Feb. 2.
A. M. Campbell, Maxville, Jan. 3 to 13.
Mrs. W. J. Hunter, Brampton, Jan. 13 to Feb. 2.

1	Norwich, Town Hall	South Oxford	Jan.	3
2	Mt. Elgin, Forresters' Hall	South Oxford	"	4
3	Bealton, Bealton Hall	North Norfolk	"	5
4	Waterford, Town Hall	North Norfolk	"	6
5	Delhi, Concil Chambers	North Norfolk	"	8
6	Courtland, Town Hall	North Norfolk	"	9
7	Langton	South Norfolk	"	10
8	Vittoria	South Norfolk	"	11
9	Aylmer, Town Hall	East Elgin	Jan.	12, 13
10	Middlemarch, Grange Hall	West Elgin	Jan.	15
11	Talbotville, Orange Hall	West Elgin	"	16
12	Dutton, Town Hall	West Elgin	"	17
13	Rodney, Town Hall	West Elgin	"	18
14	Middlemiss, Village Hall, Aft.	West Middlesex	"	19
15	Walker's School House	West Middlesex	"	20
16	Eberts, Hall	West Kent	"	22
17	Louisville, School House	West Kent	"	23
18	Baldoon, Church Hall	West Kent	"	24
19	Bear Line, Foresters' Hall	West Kent	"	25
20	Croton, Young's Hall	East Kent	"	26
21	Kent Centre, K. C. Hall	East Kent	"	27
22	Morpeth, A. O. U. W. Hall	East Kent	"	29
23	Guild's School House	East Kent	"	30
24	Comber, Town Hall	North Essex	"	31
25	Oldcastle, Town Hall	North Essex	Feb.	1
26	Harrow, Town Hall	South Essex	"	2

DIVISION 4.

J. O. Duke, Ruthven, Jan. 3 to 19.
W. C. McCalla, St. Catharines, Jan. 20 to 26.
G. S. Peart, Burlington, Jan. 3, 4, 18, 19; Feb. 1 to 5.
A. E. Calnan, Allisonville, Jan. 23 to Feb. 5.
Mrs. M. N. Norman, Toronto, Jan. 5 to 31.

1	Hornby, Hall	Halton	Jan.	3
2	Postville	Halton	"	4
3	Waterdown, Township Hall	North Wentworth	"	5
4	Freelton	North Wentworth	"	6
5	Rockton, Township Hall	North Wentworth	"	8
6	St. George, Library Hall	North Brant	"	9
7	Onondaga, Township Hall	North Brant	"	10
8	Cainsville, Hanley's Hall	North Brant	"	11
9	Tranquility, School House	North Brant	"	12
10	Burford, Cornish Hall	South Brant	"	13
11	Mohawk, Methodist Church Basement	South Brant	"	15
12	East Oakland, School House	South Brant	"	16
13	Scotland, Forester's Hall	South Brant	"	17
14	Ancaster, Town Hall	South Wentworth	"	18
15	Stoney Creek, Institute Hall	South Wentworth	"	19
16	Campden, Redden's Hall	Lincoln	"	20
17	Queenston, School House	Lincoln	"	22
18	Niagara Falls, South, Town Hall	Welland	"	23
19	Willoughby, Town Hall	Welland	"	24
20	Ridgeway, Town Hall	Welland	"	25
21	Humberstone, Town Hall	Welland	"	26

22	Pelham Centre, Town Hall	Monck	Jan.	27
23	Silverdale, School House	Monck	"	29
24	Caistorville, School	Monck	"	30
25	Canboro, Town Hall	Monck	"	31
26	Canfield, McDonald's Hall	Haldimand	Feb.	1
27	Selkirk, Town Hall	Haldimand	"	2
28	Garnet, Orange Hall	Haldimand	"	3
29	Caledonia, Town Hall	Haldimand	"	5

Division 5.

W. C. Shearer, Bright, Jan. 4 to 27.
Mrs. H. W. Parsons, Forest, Jan. 4 to 25.

1	Aberfoyle, Town Hall	South Wellington (aft.)	Jan.	4
2	Morriston, Hall	South Wellington (evg.)	"	4
3	Eden Mills, Town Hall	South Wellington (aft.)	"	5
4	Rockwood, Hall	South Wellington (evg.)	"	5
5	Alma, Alma Hall	West Wellington	"	6
6	Drayton, Town Hall	West Wellington	"	8
7	Glen Allan, Coot's Hall	West Wellington	"	9
8	Mt. Forest, Allen's Hall	East Wellington	"	10
9	Cedarvale, Orange Hall	East Wellington	"	11
10	Conn, Orange Hall	East Wellington (aft.)	"	12
11	Conn, School House	East Wellington (evg.)	"	12
12	Kenilworth, Township Hall	East Wellington	"	13
13	Chatsworth, Foresters' Hall	North Grey	"	15
14	Desboro, Town Hall	North Grey	"	16
15	Kilsyth, Township Hall	North Grey	"	17
16	Shallow Lake, Hall	North Grey	"	18
17	Kemble, School	North Grey (aft.)	"	19
18	Brown's School	North Grey (evg.)	"	19
19	Owen Sound, Council Chamber	North Grey	"	20
20	Annan, Hall	North Grey (aft.)	"	22
21	Leith, Hall	North Grey (evg.)	"	22
22	Bognor, Hall	North Grey	"	23
23	Strathnairn, School House	North Grey	"	24
24	Meaford, Town Hall	North Grey	"	25
25	Ivy, Orange Hall	South Simcoe	"	26
26	Newton Robinson, Orange Hall	South Simcoe	"	27

Division 6.

C. W. Gurney, Paris, Feb. 2 to 22.
F. R. Mallory, Frankford, Feb. 23 to 28.
Jno. Bright, Myrtle, Feb. 19 to 22.
Mrs. W. W. Farley, Smithfield, Feb. 2 to 12, 21, 22, 26.

1	Agincourt, Temperance Hall	East York	Feb.	2
2	Stouffville, Council Chamber	East York	"	3
3	Goodwood, Town Hall	North Ontario	"	5
4	Altona, Temperance Hall	North Ontario	"	6
5	Claremont	South Ontario	"	7
6	Whitevale	South Ontario	"	8
7	Kinsale	South Ontario	"	9
8	Pickering	South Ontario	"	10
9	Bailieboro, Foresters' Hall	East Durham (aft.)	"	12
10	Millbrook, Town Hall	East Durham (evg.)	"	12
11	Pontypool, C. O. O. F. Hall	East Durham (aft.)	"	13
12	Bethany, Town Hall	East Durham (evg.)	"	13
13	Nestleton, Foresters' Hall	West Durham	"	14
14	Kendall, Foresters' Hall	West Durham	"	15
15	Newcastle, Town Hall	West Durham	"	16
16	Bowmanville, Council Room	West Durham (aft.)	"	17
17	Ebenezer, School House	West Durham (evg.)	"	17
18	Oakwood	West Victoria	"	19
19	Lindsay, Town Hall	West Victoria	"	20
20	Fenelon Falls, Dickson's Hall	East Victoria	"	21

21	Bobcaygeon, Town Hall	East Victoria	Feb. 22
22	Ennismore, S. of T. Hall	West Peterboro	" 23
23	Lakefield, Village Hall	West Peterboro	" 24
24	Warsaw, Town Hall	East Peterboro	" 26
25	Douro, Old Church	East Peterboro (aft.)	" 27
26	South Dummer, School House	East Peterboro (evg.)	" 27
27	Keene, Town Hall	East Peterboro	" 28

DIVISION 7.

D. Bonis, Rannoch, Feb. 5 to Mar. 2.
J. N. Paget, Canboro, Feb. 5 to 13.
W. J. Kerr, Woodville, Feb 28 to Mar. 2.
Mrs. W. W. Farley, Smithfield, Feb. 14, 15, 28, 29.

1	Wolfe Island, Marysville Hall	Frontenac	Feb. 5
2	Joyceville, Hall	Frontenac	" 6
3	Sydenham, Town Hall	Frontenac	" 7
4	Hartington, Hall	Frontenac	" 8
5	Bath, Town Hall	Lennox	" 9
6	Napanee, Town Hall	Lennox (aft.)	" 10
7	Selby, Town Hall	Lennox (evg.)	" 10
8	Newboro, Standard Bank	Addington	" 12
9	Centreville, Town Hall	Addington	" 13
10	Melrose, Town Hall	East Hastings	" 14
11	Clazie's School House	East Hastings	" 15
12	Grafton, Township Hall	West Northumberland	" 16
13	Baltimore	West Northumberland	" 17
14	Rosneath	West Northumberland	" 19
15	Harwood, Boyle's Hall	West Northumberland	" 20
16	Coldspring	West Northumberland	" 21
17	Warkworth, Warkworth Hall	East Northumberland	" 22
18	Codrington, Orange Hall	East Northumberland	" 23
19	Menie, Lamb's Hall	East Northumberland	" 24
20	Bayside, School House	West Hastings	" 26
21	Gilbert's School House	West Hastings	" 27
22	Wallbridge, Town Hall	West Hastings	" 28
23	Frankford, Sweetman's Hall	West Hastings	" 29
24	Bloomfield, Town Hall	Prince Edward	Mar. 1
25	Ameliasburg, Town Hall	Prince Edward	" 2

DIVISION 8.

W. J. Kerr, Woodville, Feb. 6 to 20.
J. C. Shaw, Norwich, Feb. 6 to 20.
Miss M. V. Powell, Whitby, Feb. 2, 8, 16 to 20

1	Martintown, St. Andrew's Hall	Glengarry	Feb. 6
2	Maxville, Public Hall	Glengarry	" 7
3	Glen Robertson, Robertson's Hall	Glengarry	" 8
4	Vankleek Hill, Town Hall	Prescott	" 9
5	Grattan, School House	South Renfrew	" 12
6	Northcote, Temperance Hall	South Renfrew	" 13
7	Arden, Town Hall	Centre Frontenac	" 14
8	Mt. Grove, Town Hall	Centre Frontenac	" 15
9	Mountain, Oddfellows' Hall	Dundas	" 16
10	Morewood, Foresters' Hall	Dundas	" 17
11	Spencerville, Town Hall	South Grenville	" 19
12	Algonquin, Reaster's Hall	South Grenville	" 20

SUPPLEMENTARY MEETINGS.

DIVISION 1.

James McDermott, Saurin, Feb. 5 to 29.
Chas. E. Porter, Appleby, Feb. 5 to 19.
Mrs. W. B. Ferguson, Strathroy, Feb. 17 to 29.

1	Gillies Hill, Township Hall	Centre Bruce	Feb. 5
2	Paisley, Town Hall	Centre Bruce	" 6
3	Bervie, I. O. O. F. Hall	Centre Bruce	" 7

4	Kincardine, Town Hall	Centre Bruce	Feb.	8
5	Reed's Corners, Grange Hall	Centre Bruce	"	9
6	Ripley, Township Hall	Centre Bruce	"	10
7	St. Helen's, Mechanics' Inst. Hall	West Huron	"	12
8	St. Augustine, School	West Huron	"	13
9	Auburn, Temperance Hall	West Huron	"	14
10	Nile, Orange Hall	West Huron	"	15
11	Holmesville, Wilson's Hall	West Huron	"	16
12	Londesborough, Brown's Hall	West Huron	"	17
13	Belgrave, Foresters' Hall	East Huron	"	19
14	Harlock, School House	East Huron	"	20
15	Winthrop, Calder's Hall	East Huron	"	21
16	Walton, A. O. U. W. Hall	East Huron	"	22
17	Moncrief, School House	East Huron	"	23
18	Ethel, Township Hall	East Huron	"	24
19	Molesworth, Orange Hall	East Huron	"	26
20	Jamestown, Victoria Hall	East Huron	"	27
21	Bluevale, Foresters' Hall	East Huron	"	28
22	Fordwich, Brown's Hall	East Huron	"	29

DIVISION 2.

Anson Groh, Preston, Jan. 3 to Feb. 1.
R. L. Moorehouse, Cairo, Jan. 27 to Feb. 1.
Miss M. V. Powell, Whitby, Jan. 3 to 26.

1	Crown Hill, Hall	East Simcoe (aft.)	Jan.	3
2	Craighurst, Hall	East Simcoe (evg.)	"	3
3	Mitchell Square, Hall	East Simcoe (aft.)	"	4
4	Jarrett, Hall	East Simcoe (evg.)	"	4
5	Warminster, McKinley's Hall	East Simcoe (aft.)	"	5
6	Uhthoff, Waring's Hall	East Simcoe (evg.)	"	5
7	Washago, Hall	East Simcoe (aft.)	"	6
8	Ardtrea, School	East Simcoe (evg.)	"	6
9	Rosemont, Hannah Hall	West Simcoe	"	8
10	Everett, Orange Hall	West Simcoe	"	9
11	Creemore, Leonard's Hall	West Simcoe	"	10
12	Lavender, Temperance Hall	West Simcoe	"	11
13	Singhampton, Ross' Hall	West Simcoe	"	12
15	Badjeros, School House	Centre Grey	"	13
16	Dundalk, Town Hall	Centre Grey	"	16
17	Hopeville, Allan's Hall	Centre Grey	"	17
18	Flesherton, Town Hall	Centre Grey	"	18
14	Maxwell, Orange Hall	Centre Grey	"	15
19	Eugenia, Orange Hall	Centre Grey	"	19
20	Kimberley, Union Hall	Centre Grey	"	20
21	Ravenna, Town Hall	Centre Grey	"	22
22	Heathcote, Orange Hall	Centre Grey	"	23
23	Rocklyn, Agricultural Hall	Centre Grey	"	24
24	Walter's Falls, A. O. U. W. Hall	Centre Grey	"	25
25	Holland Centre, Township Hall	Centre Grey	"	26
26	Allenford, Orange Hall	West Bruce	"	27
27	Burgoyne, Church Vestry	West Bruce (aft.)	"	29
28	McLennan's School House	West Bruce (evg.)	"	29
29	Underwood, Town Hall	West Bruce	"	30
30	Tiverton, Town Hall	West Bruce	Feb.	1

DIVISION 3.

W. F. Kydd, Simcoe, December 12 to 23.
Mrs. Thos. Shaw, Hespeler, December 12 to 23.

1	Minessing, Workman's Hall	Centre Simcoe	Dec.	12
2	Antrim Mills, School	Centre Simcoe	"	13
3	New Flos, Hall	Centre Simcoe	"	14
4	Allenwood, Basement of Church	Centre Simcoe	"	15
5	No. 2 School House	Centre Simcoe	"	16
6	Wyevale, Orange Hall	Centre Simcoe	"	18
7	Wyebridge, Public Hall	Centre Simcoe	"	19
8	Penetanguishene, Town Hall	Centre Simcoe	"	20

9	Lafontaine, Foresters' Hall	Centre Simcoe	Dec. 21
10	Victoria Harbor, Public Hall	Centre Simcoe	" 22
11	Vasey, School House	Centre Simcoe	" 23

DIVISION 4.

R. Murphy, Rosemount, Feb. 5 to 19.
W. J. Gardhouse, Highfield, Feb. 5 to 19.
Miss B. Gilholm, Bright, Feb. 9 to 19.

1	Mar, School House	North Bruce	Feb. 5
2	Spry's, School House	North Bruce	" 6
3	Lion's Head, Town Hall	North Bruce	" 7
4	Hope Bay, School	North Bruce (aft.)	" 8
5	Colpoy's Bay, Bell's Hall	North Bruce (evg.)	" 8
6	Elmwood, Wildfang's Hall	South Grey and South Bruce	" 9
7	Dornoch, Smith's Hall	South Grey	" 10
8	Holstein, Agricultural Hall	South Grey	" 12
9	Dromore, Russell Hall	South Grey	" 13
10	Ayton, Doersam's Hall	South Grey	" 14
11	Mildmay, Township Hall	South Bruce	" 15
12	Belmore, Foresters' Hall	South Bruce	" 16
13	Lucknow, Town Hall	South Bruce	" 17
14	Holyrood, Township Hall	South Bruce	" 19

DIVISION 5.

F. H. Silcox, Iona, Feb. 6 to 26.
Mrs. Thos. Shaw, Hespeler, Feb. 6 to 26.

1	Wilkesport, Regan's Hall	West Lambton	Feb. 6
2	Rutherford, Township Hall	West Lambton	" 7
3	Oakdale, School House	West Lambton	" 8
4	Oil Springs, I. O. O. F. Hall	West Lambton	" 9
5	Colinville, Foresters' Hall	West Lambton	" 10
6	Courtwright, Stewart's Hall	West Lambton	" 12
7	Wyoming	East Lambton	" 13
8	Watford, Town Hall	East Lambton	" 14
9	Warwick, Town Hall	East Lambton	" 15
10	Uttoxeter, Town Hall	East Lambton	" 16
11	Camlachie, Maccabees' Hall	East Lambton	" 17
12	Forest, Town Hall	East Lambton	" 19
13	Arkona, Town Hall	East Lambton	" 20
14	Thedford, King Edward Hall	East Lambton	" 21
15	Ailsa Craig, Town Hall	North Middlesex	" 22
16	Beechwood, Hall (Fornhill)	North Middlesex	" 23
17	Coldstream, Town Hall	North Middlesex	" 24
18	Komoka, New Hall	North Middlesex	" 25

DIVISION 6.

Gavin Barbour, Crosshill, Feb. 5 to March 1.
Henry Grose, Lefroy, Feb. 24 to March 1.
Mrs. M. N. Norman, Toronto, Feb. 5 to 23.

1	Clifford, Town Hall	Union	Feb. 5
2	Lakelet, Darroch's Hall	Union	" 6
3	Drew, Temperance Hall	Union	" 7
4	Teviotdale, Foresters' Hall	Union	" 8
5	Atwood, Music Hall	North Perth	" 9
6	Gowanstown, Town Hall	North Perth (aft.)	" 10
7	Britton, School House	North Perth (evg.)	" 10
8	Carthage, Foresters' Hall	North Perth	" 12
9	Millbank, Ritter's Hall	North Perth	" 13
10	Monckton, Hall	North Perth	" 14
11	Rostock, Town Hall	North Perth	" 15
12	Kinkora, Hall	North Perth	" 16
13	Shakespeare, Temperance Hall	North Perth	" 16

14	Tavistock, Opera House	South Perth	Feb. 17
15	St. Paul's, Township Hall	South Perth	" 19
16	Sebringville, Foresters' Hall	South Perth	" 20
17	Fullarton, Township Hall	South Perth	" 21
18	Staffa, Town Hall	South Perth	" 22
19	Kirkton, Aberdeen Hall	South Perth	" 23
20	Elimville, Elimville Hall	South Huron	" 24
21	Shipka	South Huron	" 26
22	Hensall, McDonald's Hall	South Huron	" 27
23	Zurich	South Huron	" 28
24	Strong, Hall, Tuckersmith Township	South Huron	" 29
25	Varna	South Huron	Mar. 1

Division 7.

Anson Groh, Preston, Feb. 5 to 27.
Miss Susie Campbell, Brampton, Feb. 5 to 16.

1	Innerkip, Foresters' Hall	North Oxford	Feb. 5
2	Plattsville, Town Hall	North Oxford	" 6
3	Cassell, Cheese Factory	North Oxford	" 7
4	Hickson, Town Hall	North Oxford	" 8
5	Braemar, Gospel Hall	North Oxford	" 9
6	Embro, Town Hall	North Oxford	" 10
7	Harrington, Hill's Hall	North Oxford	" 12
8	Lakeside, Hall	North Oxford	" 13
9	Kintore, Company Hall	North Oxford	" 14
10	Thamesford, Orange Hall	North Oxford	" 15
11	Wellburn, German's Hall	East Middlesex	" 16
12	Birr, Village Hall	East Middlesex	" 17
13	Hyde Park, Foresters' Hall	East Middlesex	" 19
14	Wilton Grove, Presbyterian S. S.	East Middlesex	" 20
15	Derwent, M. S. School	East Middlesex	" 21
16	Crampton, Foresters' Hall	East Middlesex	" 22
17	Mt. Brydges, Town Hall	West Middlesex	" 23
18	Appin, Town Hall	West Middlesex	" 24
19	Glencoe, Town Hall	West Middlesex	" 26
20	Wardsville, Town Hall	West Middlesex	" 27

Division 8.

W. C. Shearer, Bright, Feb. 6 to March 2.
S. H. Rittenhouse, Jordan Harbor, Feb. 6 to 15; 24 to March 2.
Mrs. W. J. Hunter, Brampton, Feb. 19 to 23.

1	Port Dover, Town Hall	South Norfolk	Feb. 6
2	Walsh, Town Hall	South Norfolk	" 7
3	St. Williams, Town Hall	South Norfolk	" 8
4	Fairgrounds, Town Hall	South Norfolk	" 9
5	Vienna, Town Hall	East Elgin	" 10
6	Eden, School House	East Elgin (aft.)	" 12
7	Straffordville, Township Hall	East Elgin (evg.)	" 12
8	Mt. Salem, Royal Templars' Hall	East Elgin	" 13
9	Sparta, Hall	East Elgin	" 14
10	Mapleton, School House	East Elgin	" 15
11	Shedden, Morrison's Hall	West Elgin	" 16
12	West Lorne, Town Hall	West Elgin	" 17
13	Highgate, Township Hall	East Kent	" 19
14	Ridgetown, Township Hall	East Kent	" 20
15	Thamesville, Town Hall	East Kent	" 21
16	Botany, Presbyterian Church	East Kent	" 22
17	Wabash, Foresters' Hall	East Kent	" 23
18	Cedar Springs, Church	West Kent	" 24
19	Merlin, Ayr Hall	West Kent	" 26
20	Fletcher, Foresters' Hall	West Kent	" 27
21	Valetta, Township Hall	West Kent	" 28
22	Romney, Township Hall	West Kent	Feb. 29
23	Wheatley, Gibson's Hall	South Essex and West Kent	Mar. 1, 2

Division 8a.

A. E. Caluan, Allisonville, Feb. 12 to 26.
Miss Ethel Robson, Ilderton, Feb. 12 to 23.

1	Leamington, Town Hall	South Essex	Feb. 12
2	Kingsville, Town Hall	South Essex	" 13
3	Cottam, Town Hall	South Essex	" 14
4	Essex, Town Hall	South Essex	" 15
5	Malden, Town Hall	South Essex	" 16
6	South Woodslee, St. Lawrence Hall	North Essex	" 17
7	Maidstone, C. M. B. A. Hall	North Essex	" 19
8	Canard, C. M. B. A. Hall	North Essex	" 20
9	Tecumseh, St. Jean Hall	North Essex	" 21
10	Bell River, Town Hall	North Essex	" 22
11	Stoney Point, Town Hall	North Essex	" 23
12	St. Joachim, Town Hall	North Essex	" 24
13	Elmstead, Foresters' Hall	North Essex	" 26

Division 9.

Geo. Carlaw, Warkworth, Feb. 1 to 29.
S. G. Carlyle, Chesterville, Feb. 9 to 14.
Mrs. F. W. Watts, Clinton, Feb. 1 to 8; 15 to 29.

1	Burgessville, Oddfellows' Hall	South Oxford	Feb. 1
2	Currie, A. O. U. W. Hall	South Oxford	" 2
3	Beachville, Town Hall	South Oxford	" 3
4	North Oxford, Township Hall	South Oxford	" 5
5	Foldens, Foldens' Hall	South Oxford	" 6
6	Springford, Town Hall	South Oxford	" 7
7	Brownsville, Town Hall	South Oxford	" 8
8	Guysboro, Orange Hall	North Norfolk	" 9
9	Kelvin, Kelvin Hall	North Norfolk	" 10
10	Windham Centre, Town Hall	North Norfolk	" 12
11	Boston, Foresters' Hall	North Norfolk	" 13
12	Tyrrell, Tyrrell Hall	North Norfolk	" 14
13	Springvale, C. F. Hall	Haldimand	" 15
14	Circleville, Hall	Haldimand	" 16
15	Nanticoke, Crescent Hall	Haldimand	" 17
16	Erie, Orange Hall	Haldimand	" 19
17	Kohler, Kohler Hall	Haldimand	" 20
18	Rainham Centre, Town Hall	Haldimand	" 21
19	S. Cayuga, School House	Haldimand	" 22
20	York, Town Hall	Haldimand	" 23
21	Oshweken, Council House	South Brant	" 24
22	Burtch, School House	South Brant	" 26
23	Falkland, Halbert's Hall	South Brant	" 27
24	Cathcart, Foresters' Hall	South Brant	" 28
25	New Durham, Cong. Ch. Basement	South Brant	" 29

Division 10.

R. H. McCurdy, Vienna, Feb. 1 to March 4.
Mrs. W. H. Parsons, Forest, Feb. 1 to March 4.
Frank Dempsey, Albury, Feb. 1 to 8; 28 to March 4.
Wm. Emory, Aldershot, Feb. 9 to 14.
A. M. Campbell, Maxville, Feb. 15 to 27.

1	Jerseyville, McPherson's Hall	South Wentworth	Feb. 1
2	Glanford, Town Hall	South Wentworth	" 2
3	Carluke, School House	South Wentworth	" 3
4	Hannon, School	South Wentworth	" 5
5	Binbrook, Temperance Hall	South Wentworth	" 6
6	Tapleytown, Old Church	South Wentworth	" 7
7	Winona, Institute Hall	South Wentworth	" 8
8	Beamsville, Town Hall	Lincoln	" 9
9	Jordan, Frank's Hall	Lincoln	" 10

10	Grantham, Township Orange Hall	Lincoln		Feb.	12
11	Virgil, Public Hall	Lincoln		"	13
12	South End	Welland		"	14
13	Allanburg, Township Hall	Welland		"	15
14	Quaker Road, School House	Welland		"	16
15	Crowland, Township Hall	Welland		"	17
16	Stevensville, Cullie Hall	Welland		"	19
17	Brookfield Sta., School House	Welland		"	20
18	Bowen Road, School House	Welland		"	21
19	Marshville, Town Hall	Monck		"	22
20	Byng, Town Hall	Monck		"	23
21	Attercliffe Sta., Luit's Hall	Monck		"	24
22	Wellandport, Misener's Hall	Monck		"	26
23	Smithville, Brant's Hall	Monck		"	27
24	Sheffield, Township Hall	North	Wentworth	"	28
25	Kirkwall, School House	North	Wentworth	"	29
26	Westover, I.O.O.F. Hall	North	Wentworth	Mar.	1
27	Carlisle, Orange Hall	North	Wentworth	"	2
28	Millgrove, Township Hall	North	Wentworth	"	4

DIVISION 11.

Henry Grose, Lefroy, Jan. 22 to Feb. 19.
Miss Gertrude Gray, Toronto, Jan. 22 to 30; Feb. 14 to 19.

1	Wellesley, Opera House	North	Waterloo	Jan.	22
2	Crosshill, Township Hall	North	Waterloo	"	23
3	Heidelberg, Steiss Hall	North	Waterloo	"	24
4	St. Jacobs, Wildman's Hall	North	Waterloo	"	25
5	Floradale, Steddick's Hall	North	Waterloo	"	26
6	West Montrose, Jupp's Hall	North	Waterloo	"	27
7	Conestego, Township Hall	North	Waterloo	"	29
8	Waterloo, Library Hall	North	Waterloo	"	30
9	Breslau, Hall	South	Waterloo	"	31
10	Preston, Council Room	South	Waterloo	Feb.	1
11	Hespeler, Gray's Hall	South	Waterloo	"	2
12	Galt, Town Hall	South	Waterloo	"	3
13	Branchton, Foresters' Hall	South	Waterloo	"	5
14	Ayr, McGregor's Hall	South	Waterloo	"	6
15	Roseville, School Room	South	Waterloo	"	7
16	New Dundee Chipman's Hall	South	Waterloo	"	8
17	Haysville, Village Hall	South	Waterloo	"	9
18	Mannheim, School Room	South	Waterloo	"	10
19	New Hamburg, Fell Hall	South	Waterloo	"	12
20	Philipsburg, Hall	South	Waterloo	"	13
21	Glenmorris, Foresters' Hall	North	Brant	"	14
22	Oak Park, Stock Farm	North	Brant	"	15
23	White's, School House	North	Brant	"	16
24	Middleport, McKelvey's Hall	North	Brant	"	17
25	Langford, School House	North	Brant	"	19

DIVISION 12.

David Bonis, Rannoch, Jan. 3 to 31.
Miss B. Gilholm, Bright, Jan. 3 to 31.

1	Stroud, Orange Hall	South	Simcoe	Jan.	3
2	Thornton, Temperance Hall	South	Simcoe	"	4
3	Churchill, Orange Hall	South	Simcoe	"	5
4	Thompsonville, Orange Hall	South	Simcoe	"	6
5	Loretto, Orange Hall	South	Simcoe	"	8
6	Sand Hill, Church	Peel		"	9
7	Castlemore, O'Leary's Hall	Peel		"	10
8	Cheltenham, Harris Hall	Peel		"	11
9	Belfountain, Church	Peel		"	12
10	Hillsburg, Town Hall	Centre	Wellington	"	13
11	Cumnock, School House	Centre	Wellington	"	15
12	Bethany, Methodist Church	Centre	Wellington	"	16

13	Palmerston, Town Hall	West Wellington	Jan. 17
14	Moorefield, Township Hall	West Wellington	" 18
15	Rothsay, Temperance Hall	West Wellington	" 19
16	Arthur, Town Hall	East Wellington	" 20
17	Damascus, Township Hall	East Wellington	" 22
18	Monticello, Hall	East Wellington	" 23
19	Grand Valley, Chatfield's Hall	East Wellington	" 24
20	Shelburne, Town Hall	Dufferin	" 25
21	Orangeville, Public Library	Dufferin	" 26
22	Duntroon, S.O.S. Hall	West Simcoe	" 27
23	Batteau, School House	West Simcoe	" 29
24	Stayner, Town Hall	West Simcoe	" 30
25	New Lowell, Township Hall	West Simcoe	" 31

DIVISION 13.

Henry Grose, Lefroy, Jan. 3 to 17.
F. R. Mallory, Frankford, Jan. 18 to 31.
Miss S. Campbell, Brampton, Jan. 12 to 31.

1	Jessopville, Church Hall	Dufferin (aft.)	Jan. 3
2	Keldon, Church Hall	Dufferin (eve.)	" 3
3	Riverview, School House	Dufferin (aft.)	" 4
4	Corbetton, Church Hall	Dufferin (eve.)	" 4
5	Honeywood, C. F. Hall	Dufferin	" 5
6	Horning's Mills, Workmen's Hall	Dufferin	" 6
7	Violet Hill, Orange Hall	Dufferin (aft.)	" 8
8	Whitfield, Orange Hall	Dufferin (eve.)	" 8
9	Perm, Orange Hall	Dufferin	" 9
10	Mono Centre, Council Chamber.	Dufferin (aft.)	" 10
11	Camilla, Workmen's Hall	Dufferin (eve.)	" 10
12	Laurel, Township Hall	Dufferin	" 11
13	Kleinburg, Temperance Hall	West York	" 12
14	Woodbridge, Township Hall	West York	" 13
15	Weston, Township Hall	West York	" 15
16	Islington, Society Hall	West York (aft.)	" 16
17	Elia, Forresters' Hall	West York (eve.)	" 16
18	Maple, Masonic Hall	West York	" 17
19	Nobleton, Music Hall	North York	" 18
20	Schomberg, Market Hall	North York	" 19
21	Kettleby, Temperance Hall	North York	" 20
22	Queensville, Presbyterian Hall	North York	" 22
23	Keswick, Town Hall	North York	" 23
24	Mount Albert, Town Hall	North York	" 24
25	Vandorf, Town Hall	North York	" 25
26	Bethesda, Town Hall	North York	" 26
27	Victoria Square, Public Hall	East York	" 27
28	Thornhill, Victoria Hall	East York	" 29
29	Wexford, Methodist Church	East York	" 30
30	Box Grove, Forresters' Hall	East York	" 31

DIVISION 14.

Gavin Barbour, Crosshill, Jan. 3 to Feb. 2.
Miss A. M. Hotson, Parkhill, Jan. 3 to 22; 29 to Feb. 2.

1	Sanford, I. O. O. F. Hall	North Ontario	Jan. 3
2	Zephyr, Public Hall	North Ontario	" 4
3	Sunderland, Town Hall	North Ontario	" 5
4	Beaverton, Town Hall	North Ontario	" 6
5	Gamebridge, Grange Hall	North Ontario	" 8
6	Brechin, School House	North Ontario	" 9
7	Udney, Orange Hall	North Ontario	" 10
8	Woodville, Village Hall	West Victoria	" 11
9	Hartley, Village Hall	West Victoria	" 12
10	Little Britain, Temperance Hall	West Victoria	" 13
11	Valentia, Forresters' Hall	West Victoria	" 15

12	Cameron, Orange Hall	East Victoria	Jan. 16
13	Burnt River, Orange Hall	East Victoria	" 17
14	Dunsford, Old Church	East Victoria	" 18
15	Omemee, Opera House	East Victoria	" 19
16	Bethany, Town Hall	East Durham (aft.)	" 20
17	Manvers Station, Orange Hall	East Durham (eve.)	" 20
18	Cavanville, Old Church	East Durham (aft.)	" 22
19	Mount Pleasant, Forresters' Hall	East Durham (eve.)	" 22
20	Elizabethville, Church Basement	East Durham (aft.)	" 23
21	Garden Hill, Orange Hall	East Durham (eve.)	" 23
22	Canton, S. of E. Hall	East Durham	" 24
23	Morrish, S.S. Hall	East Durham	" 25
24	Newtonville, Sons of T. Hall	West Durham (aft.)	" 26
25	Orono, Council Room	West Durham (eve.)	" 26
26	Tyrone, S. of T. Hall	West Durham	" 27
27	Solina, Temperance Hall	West Durham	" 29
28	Columbus	South Ontario	" 30
29	Whitby,	South Ontario	" 31
30	Port Perry	South Ontario	Feb. 1
31	Greenbank	South Ontario	" 2

Division 15.

C. W. Gurney, Paris, Jan. 3 to Feb. 1.
A. D. Cameron, Summerstown, Sta., Jan. 19 to 29.
Mrs. F. W. Watts, Clinton, Jan. 8 to 16; 29 to Feb. 1.

1	Stewart's, Stewart's Hall	West Peterboro'	Jan. 3
2	Fourth Line Smith, Temp. Hall	West Peterboro'	" 4
3	Peterborough, Council Chamber	West Peterboro' (aft.)	" 5
4	North Monaghan, Town Hall	West Peterboro' (eve.)	" 5
5	Westwood Township Hall	East Peterboro'	" 6
6	Norwood, Town Hall	East Peterboro'	" 8
7	Havelock, Town Hall	East Peterboro'	" 9
8	Tweed, Town Hall	East Hastings	" 10
9	Roslin, C. O. O. F. Hall	East Hastings	" 11
10	Philipston, C. O. F.	East Hastings	" 12
11	Foxboro, School House	East Hastings	" 13
12	Turner's School House	West Hastings	" 15
13	River Valley, School House	West Hastings	" 16
14	Hoyles' School House	West Hastings	" 17
15	Demorestville, Town Hall	Prince Edward	" 18
16	Cherry Valley, Town Hall	Prince Edward	" 19
17	West Lake, School House	Prince Edward	" 20
18	Wellington, Town Hall	Prince Edward	" 22
19	Hillier, Town Hall	Prince Edward	" 23
20	Wooler, Town Hall	East Northumberland	" 24
21	Brighton, Town Hall	East Northumberland	" 25
22	Dundonald, Church Hall	East Northumberland	" 26
23	Castleton, Town Hall	East Northumberland	" 27
24	Roseneath, Township Hall	West Northumberland	" 29
25	Baltimore, Chapman's Hall	West Northumberland	" 30
26	Centreton, Methodist S.S. Hall	West Northumberland	" 31
27	Coldsprings, Township Hall	West Northumberland	Feb. 1

Division 16.

S. G. Carlyle, Chesterville, Jan. 3 to 30.
W. J. Kerr, Woodroffe, Jan. 3 to 15; 25 to 30.
Mrs. W. W. Farley, Smithfield, Jan. 12, and 16 to 23.

1	Sharbot Lake, Town Hall	Centre Frontenac	Jan. 3
2	Picadilly, Town Hall	Centre Frontenac	" 4
3	Westport, Wesley Hall	South Leeds	" 5
4	Seeley's Bay, Knight's Hall	South Leeds	" 6
5	Lansdowne, Town Hall	South Leeds	" 8

6	Dufferin, Orange Hall	Frontenac	Jan. 9
7	Inverary, Hall	Frontenac	" 10
8	Elginburg, Town Hall	Frontenac	" 11
9	Westbrook, Town Hall	Frontenac	" 12
10	Tamworth, Town Hall	Addington	" 13
11	Enterprise, Keech's Hall	Addington	" 15
12	Queensboro, Orange Hall	North Hastings	" 16
13	Eldorado, Town Hall	North Hastings	" 17
14	Madoc, Town Hall	North Hastings	" 18
15	Ivanhoe, Orange Hall	North Hastings	" 19
16	Moira, Town Hall	North Hastings	" 20
17	Stirling, Town Hall	North Hastings	" 22
18	Springbrook, Forresters' Hall	North Hastings	" 23
19	Marmora, Town Hall	North Hastings	" 24
20	Wilton, Grange Hall	Lennox	" 25
21	Odessa Town Hall	Lennox	" 26
22	Switzerville, School House	Lennox	" 27
23	Sillsville, Town Hall	Lennox	" 29
24	Adolphustown, Town Hall	Lennox	" 30

Division 17.

Geo. Carlaw, Warkworth, Jan. 3 to 30.
J. C. Stuart, Dalmeny, Jan. 3 to 12; Feb. 1 and 2.
A. D. Cameron, Summerston Sta., Jan. 31 to Feb. 2.
Mrs. E. B. McTurk, Lucan, Jan. 8 to 30.

1	Toledo, Town Hall	N. Leeds and Grenville	Jan. 3
2	Easton's Corners, Town Hall	N. Leeds and Grenville	" 4
3	Merrickville, Town Hall	N. Leeds and Grenville	" 5
4	Burritt's Rapids, Victoria Hall	N. Leeds and Grenville	" 6
5	Maynard, Methodist Church	South Grenville	" 8
6	Roebuck, School House	South Grenville	" 9
7	Brouseville, School House	South Grenville	" 10
8	Shanly, Workman's Hall	South Grenville	" 11
9	Ventnor, School House	South Grenville	" 12
10	Williamsburg, Boyce's Hall	Dundas	" 13
11	Winchester Springs, Orange Hall	Dundas	" 15
12	Iroquois, Town Hall	Dundas	" 19
13	Summerton, Public Hall	Glengarry	" 20
14	Bainsville, Sangster & McCraig's Hall	Glengarry	" 22
15	Wales, Connoly's Hall	Stormont	" 23
16	South Branch, School House	Stormont	" 24
17	Cornwall Centre, Township Hall	Stormont	" 25
18	Northfield Station, Arbuthnot Hall	Stormont	" 26
19	Finch, Massey Harris Hall	Stormont	" 27
20	Avonmore, Beaver Hall	Stormont	" 29
21	Moose Creek, Gagnois Hall	Stormont	" 30
22	Greenfield, Township Hall	Glengarry	" 31
23	Treadwell, School House	Prescott	Feb. 1
24	Lefaivre, Hall	Prescott	" 2

Division 18.

R. E. Harkness, Irena, Jan. 3 to Feb. 1.
R. J. Connell, Roebuck, Jan. 11 to 15.
A. M. Campbell, Maxville, Jan. 29 to Feb. 1.
Miss Ethel Robson, Ilderton, Jan. 19 to 29.

1	Kars, Public Hall	Carleton	Jan. 5
2	Stittsville, Harkin's Hall	Carleton	" 6
3	South March, Town Hall	Carleton	" 8
4	Carp, Town Hall	Carleton	" 9
5	Fitzroy Harbor, Orange Hall	Carleton	" 10
6	Glasgow, David Hall	South Renfrew	" 11
7	Renfrew, Temperance Hall	South Renfrew	" 12

8	Admaston, Temperance Hall	South	Renfrew	Jan. 13
9	Foresters' Falls, Temperance Hall	North	Renfrew	" 15
10	Beachburg, Town Hall	North	Renfrew	" 19
11	Westmeath, School House	North	Renfrew	" 20
12	Alice, Presbyterian Church	North	Renfrew	" 22
13	Maberly, Town Hall	South	Lanark	" 24
14	Perth, Town Hall	South	Lanark	" 25
15	Richardson's School	South	Lanark	" 26
16	Balderson's School	South	Lanark	" 27
17	Lanark Village Town Hall	North	Lanark	" 29
18	Middleville, Town Hall	North	Lanark	" 30
19	Watson's Corners, Temperance Hall	North	Lanark	" 31
20	McDonald's Corners, Agric. Hall	North	Lanark	Feb. 1

SUBJECTS AND SPEAKERS.

BAILEY, C. F., B.S.A., Department of Agriculture, Toronto.—Mr. Bailey is the Live Stock Specialist in the Institutes branch. He has successfully managed a farm in the Annapolis Valley, N.S., where apple growing was followed in conjunction with general farming. Mr. Bailey went largely into the breeding of Hackney horses, Ayrshire cattle and Leicester sheep. He has made a special study of live stock, and is a good judge of the same. He will be prepared to conduct judging classes in beef and dairy cattle, heavy and light horses, sheep and swine.

Subjects:—

"The Breeding and Selection of Dairy Cattle."
"Beef Cattle."
"The Heavy Horse."
"Soil Fertility and Conservation of Moisture."
"Bacteria on the Farm."
"Silos and their Construction."

BALDWIN, L. H., Forest Road, Toronto.—Mr. Baldwin is the proprietor of a poultry farm on the colony plan. He is a capable business man, and has made the work a pronounced success, introducing many original ideas in connection with brooders, incubators, housing and feeding of his birds. Mr. Baldwin is well qualified to speak on any phase of the industry.

Subjects:—

"Breeding, Feeding and General Care of Fowl."
"Incubation and Incubators."
"Winter Egg Production."
"Poultry Buildings and Appliances."
"Preparation of Fowl for the Market."

BARBOUR, GAVIN, Crosshill.—Mr. Barbour is representative of a large number of farmers who have succeeded, by hard labour and a thorough knowledge of the lines of farming followed, in increasing the productivity of the farm and making many improvements, while at the same time paying off obligations.

Mr. Barbour has, for the past five years, been well received by the Institutes. He is particularly well qualified to give practical demonstrations in the judging of beef cattle, having given some little attention to this work for the benefit of his neighbors. The young farmers especially should benefit from Mr. Barbour's addresses.

Subjects:—

"Soil Cultivation and Control of Soil Moisture."
"Beef Cattle."
"Draught Horses and How to Raise Them."
"Corn and the Silo."
"How to Grow Crops in a Dry Season."

Evening: "Farmers and their Sons."
"Present Day Needs of Ontario Agriculture."

BECKETT, H. L., B.S.A., Hamilton.—Mr. Beckett is a prosperous young farmer in the vicinity of Hamilton. He spent his early years on the farm, and subsequently took a full course at the Ontario Agricultural College. Mr. Beckett has successfully managed the homestead, devoting a good deal of attention to the dairy industry. He had charge of one of the travelling dairies which toured the Province some years ago, and gave general satisfaction in conducting this educational campaign. He has already had extended experience in Institute work. Mr. Beckett will be available for occasional meetings this winter.

Subjects:—

"Farmyard Manure; its Management and Application."
"Improving our Dairy herds."
"Feeding for Milk."

Evening: "Farming as an Occupation."

BONIS, DAVID, Rannoch.—Mr. Bonis has not only successfully operated from two to five hundred acres of land during his twenty-five years' experience in agriculture, but taken an active part in municipal improvements, particularly good roads. His addresses on corn and ensilage are of particular value to Ontario farmers.

Subjects:—

"Building Good Roads."
"Working Out a County Good Roads System."
"Corn for Ensilage."
"Alfalfa."
"Fattening Cattle: Grazing *vs.* Stabling."

BRIGHT, JOHN, Myrtle.—Mr. Bright is one of the best and most favorably known of our Ontario live stock breeders. We are fortunate in being able to secure his services for a limited amount of Institute work this winter.

Subjects:—

"Breeding and Feediug of Horses."
"Breeding and Feeding of Beef Cattle."
"Cultivation of the Soil and Soil Moisture."
"Growing of Alfalfa and its value as feed."

BUNTING, W. H., St. Catharines.—Mr. Bunting, past president of the Ontario Fruit Growers' Association, is one of the largest fruit growers in the Niagara peninsula. His farm is devoted largely to apples, peaches and truck crops. Mr. Bunting also does an extensive market garden business. He is a recognized authority on all matters pertaining to Ontario fruit growing and marketing.

Subjects:—

"The Care of the Orchard."
"Spraying."
"Small Fruits."
"Filler Crops."
"Marketing of Fruit."

CALNAN, A. E., Allisonville.—Mr. Calnan is a dairyman and a specialist in the production of high-class seed corn. For years he has been prominently connected with one of the leading factories in Prince Edward County, which has become so famous for its high quality of cheese. He is well qualified to talk on general farming, and is appreciated by those who earnestly wish to make the best of grain and dairy products.

Subjects:—

"The Building and Maintenance of the Dairy Herd."
"The Raising of Fodder for Dairy Cattle."
"Improvement of Crops by Seed Selection."
"The Cultivation of the Soil."
"The Dairy Industry."

Evening: "Our Canadian Heritage."
"Ontario Agriculture."

CAMERON, A. DOUGALD, Summerstown Station, Ont.—Mr. Cameron is a young man with a college training, who has had extended practical experience upon a large dairy farm, devoted to the production of milk supplied to the Montreal trade. He is a man of considerable experience in public speaking.

Subjects:—

"Clovers."
"The Rotation of Crops."
"Conservation of Soil Moisture."
"Breeding and Care of the Dairy Cow."
"The Dairy Industry."
"Cultivation of the Soil and the Principles underlying Soil Moisture."

Evening: "A Plea for the Boy."

CAMPBELL, A. M., Maxville.—Mr. Campbell is a successful dairyman and general farmer. His practical grasp of the subjects announced, and the clear and forceful manner in which he imparts information, render him a valuable man in Institute work.

Subjects:—

"The Breeding of Dairy Cattle."
"Care and Feeding of the Dairy Cow."
"Cultivation of Corn and the Silo."
"Farm Management."

Evening: "The Bright Side of Farm Life."

CARLAW, GEO., Warkworth.—Mr. Carlaw is a good, practical farmer in Northumberland County. He attended the Ontario Agricultural College in his earlier years, and since then has been putting into practice on his farm the knowledge acquired in that institution. He is a practical dairyman, having served his time in the home dairy and in the factory. Mr. Carlaw is also familiar with the practical work of the Farmers' Institute, having been secretary of his own local Institute for many years. Mr. Carlaw has had several years' experience in Ontario Institutes, both as lecturer and officer, and has also been engaged at Institute work in Quebec.

Subjects:—

"Feeding, Care and Management of the Dairy Cow."
"Cultivation of the Soil."
"Underdraining."
"Eradication of Weeds."

Evening: "Agricultural Education."

CARLYLE, S. G., Chesterville.—Mr. Carlyle is one of the progressive farmers of Dundas county who has specialized in heavy horses and dairy cattle. He is thoroughly practical in his work and has the faculty of giving addreses and answering questions in a manner most satisfactory to the farmer.

Subjects:—

"The Breeding of Horses in Ontario."
"The Rearing, Breeding and Feeding a Dairy Herd on a Balance Ration Grown on our Ontario Farms."
"Some of the Advantages of Farm Life in Ontario."

CLARK, J. W., Cainsville.—Mr. Clark is one of the largest poultry breeders in Ontario, and has won many prizes for dressed poultry at the Winter Fair, Guelph, including the sweepstakes. He is a strong advocate of utility breeds for the farmer. For two years Mr. Clark was poultry instructor in an American State Agricultural College. He is also a breeder of pure-bred hogs of the bacon type; has had several years' experience in growing alfalfa, and has also a large apiary. Mr. Clark has given considerable attention to the production of good seed and methods of identification and eradication of weeds. After four years' work on an apple orchard, he increased the yield from 100 barrels of inferior fruit to 400 barrels of a choice product. In 1909 his apiary netted a two-ton yield. Mr. Clark will explain his methods to the Institutes.

Subjects:—

"Growing Alfalfa."
"Commercial Apple Growing—How to Make it Pay."
"Growing Small Fruits—Strawberries, Raspberries, Currants, etc."
"Importance of Seed Selection."
"Commercial Fertilizers—Do They Pay?"

Evening: "Poultry: Selecting; Feeding; Hatching, Natural and Artificial; Rearing; Fattening; Housing."
"Care of an Apiary."

CORNELL, J. G., Scarboro'.—Mr. Cornell has had a number of years' practical experience in successfully managing his own farm, which has been devoted largely to the production of milk. He was instrumental in organizing the Farmers' Dairy Company, a co-operative concern which delivers to the citizens of Toronto the milk produced by its stockholders. He is also President of the Milk Producers' Association.

Subjects:—

"Production of Milk for City trade."
"Production and Feeding of Ensilage."
"Cultivation and Rotation."

Evening: "Improvement in Rural Conditions."
"Co-operation for the Farmer."

DUKE, J. O., Ruthven.—Mr. Duke is a successful farmer in Kent County, and has given special attention to corn breeding and seed selection. His addresses, being founded on practical experience, are of much value to those who hear them.

Subjects:—

"Corn Growing."
"Improvement of Seed."
"The Peach Industry."
"Apple Culture in Western Ontario."
"Tile Drainage."

Evening: "Education for Farmers' Boys and Girls."
"Home Life on the Farm."
"Business End of Farming."

DYER, WM. D., B.S.A., Columbus.—Mr. Dyer is one of the successful farmers of South Ontario. His course at the College has been put to good use in making the "old farm pay." He has an up-to-date equipment, and is following common-sense, advanced methods in all his work.

Subjects:—

"Rotation of Crops."
"Farm Buildings."
"General Care of Farm Stock."
"The Production of Milk."
"The Bacon Hog."

FARMER, G. H., Steelton.—Mr. Farmer has lived in Algoma for twenty-eight years, and for the past twenty years has been identified with nearly every progressive agricultural movement in his section, especially Institutes and Farmers' Clubs, pure seed, a better class of stock, and growing alfalfa. His experience and observations will be found of special value to the farmers who work under similar conditions, and especially to those who are beginners.

Subjects:—

"Weeds and how to eradicate them."
"Farm Drainage."
"Seed Selection."
"Growing Alfalfa in New Ontario."
"Selection of a Dairy Cow."
"Potatoes."

Evening: "Benefits of Institutes and Farmers' Clubs."
"Mistakes in Farming."
"The Sanitary Needs of the Farm."

FISHER, W. F. W., Burlington.—Mr. Fisher is a large fruit grower, strawberries and pears being his special lines. He has one of the best dwarf pear orchards in Ontario, as well as a large orchard of standard pears. Besides this he has a mixed orchard of pears and apples. Mr. Fisher is secretary and manager of the Burlington Fruit Growers' Association, one of the oldest co-operative associations in the Province.

This association ships largely in boxes to Glasgow. Mr. Fisher is much in demand as a speaker at the special Fruit Institutes, and is prepared to discuss all phases of practical fruit growing.

Subjects:—

"Cultivation of the Orchard."
"Pruning and Grafting."
"Spraying."

GARDHOUSE, JOHN, *Highfield*.—Mr. Gardhouse is a well-known breeder of Shire horses, Shorthorn cattle and long-wool sheep. All of the prize lists of our large fairs testify to his ability to raise high-class stock. He raises most of the food for his pure-bred stock, and is prepared to tell how he cultivates his land, plants his crop and mixes his foods so as to secure the best results from his live stock. Mr. Gardhouse will be found of special value to those Institutes where the officers wish for practical work on heavy hores, beef cattle, or sheep.

Subjects:—

"Horse Breeding for Profit."
"Care and Management of Horses."
"How to Select and Feed Beef Cattle."
"Care and Management of Sheep."
"Raising Feed for Live Stock."

Evening: "How to Improve Present Farm Conditions.'
"How to Interest the Young People in the Farm."

GARDHOUSE, WM. J., Highfield, Ont.—Mr. Gardhouse is the son of John Gardhouse, so well and favorably known to live stock men throughout the Dominion, and, although a young man, has already had considerable experience in the judging of live stock at fall fairs. He is a most successful farmer and an excellent judge of heavy horses and beef cattle. He will devote more or less time during the coming winter to short course work, as well as regular Institute work.

Subjects:—

"Conformation and Judging of Heavy Horses, Beef Cattle and Sheep."
"Cheap Foods for Farm Stock."
"Type in Live Stock."

GOOD, W. C., B.A., Brantford.—Mr. Good, President of the North Brant Farmers' Institute, is a graduate of Toronto University. He spent nearly two years as assistant chemist at the O.A.C., 1901-03, since which time he has followed farming, invariably taking part in Institute meetings. Mr. Good ably combines the scientific and practical in such a way that he is greatly appreciated as a speaker.

Subjects:—

"Corn and the Silo."
"Control of Soil Moisture."
"Principles of Stock Feeding."
"Alfalfa and Other Legumes."

Evening: "Improvements in Rural Education."
"Organization Among Farmers.'
"How to Keep Healthy."

GROH, ANSON, Preston.—Mr. Groh has demonstrated how a very ordinary farm can be made a money-maker to its owner at the same time that the fertility is being increased and improvements made. Mr. Groh has given close attention to farm forestry, a subject of importance to Ontario farmers. He has kept a daily individual milk record of his herd for eleven years. His experience in building silos, stables, walls and tanks with cement, and in the use of gasoline engines, renders his instruction of these lines of special value to farmers.

Subjects:—

"Farm Forestry."
"Lucerne and other Clovers."
"Soil Problems."
"Corn and the Silo."
"Fertility of the Soil and Conservation of Moisture."
"Systematic Rotation of Farm Crops."
"Care and Management of Dairy Cattle and Hogs."

Evening: "The Stairway to Success."
"Three Generations in Waterloo County."

GROSE, HENRY, Lefroy.—Mr. Grose is the owner of a first-class farm in Simcoe County, and has been eminently successful in general farming. He has the happy faculty of presenting hard facts in a pleasing manner, and his address to boys on the farm is very instructive and uplifting. Mr. Grose has attended Institute meetings for two seasons with acceptance, and his services should be of special value in those sections where mixed farming is followed.

Subjects:—

"How to Increase and Maintain the Fertility of the Soil."
"Selection of Seed."
"Home Dairy Work."
"The Growing of Clover."

Evening: "The Canadian Boy and Girl."
"Benefits of Institute Work."

GURNEY, C. W., Paris.—Mr. Gurney is one of the progressive farmers of Brant County, and his success in general agriculture, with special emphasis on wheat and apple production, enables him to be of service to the great majority of Ontario farmers. The great bulk of tillers of the soil can be classed as "general farmers." They will get much of interest and value from Mr. Gurney, who has already rendered most acceptable service in local Institutes.

Subjects:—

"Breeding and Care of Sheep."
"Selection and Training of Horses."
"The Split-log Drag."
"Cereal Grains."
"Care of the Apple Orchard."
"Industrial Alcohol."

HAMILTON, CLARK, Dundela.—Mr. Hamilton since attending the Ontario Agricultural College, eight years ago has been actively engaged in managing a two hundred acre farm upon which pure bred Holstein-friesian cattle and Yorkshire swine have been special features. Mr. Hamilton has taken the initial step in many cases, in scientific agriculture in his locality. He has contributed largely to the Agricultural Press and is experienced in Institute work.

Subjects:—

"The Calf and Heifer; their Feeding, Breeding and Care."
"Summer and Autumn care of the Dairy Herd."
"The Uses and Abuses of the Silo."
"Crop Rotation for the Dairy Farm."
"Methods and Objects of Soil Cultivation."
"Pork Production."
"Co-operation."
"The Social and Economical Advantages of Rural Life."

HALLMAN, A. C., Breslau.—Mr. Hallman was born and raised on a farm, and has been farming over 20 years with great success, having built up an impoverished farm. He is a well-known breeder and feeder of Holstein cattle, and for years has won many prizes for hogs at some of our leading exhibitions. He has also judged at many of our fairs, including Toronto Industrial, hence his talk on the improvement of live stock has been well received by many farmers.

Subjects:—

"How to Improve Our Live Stock; Their Care and Feeding."
"The Bacon Hog and Export Trade."
"Cultivation of Corn and the Silo."
"Growing Sugar Beets for the Factory."
"Home Dairying."
"Noxious Weeds."

Evening: "The Farmer's Fruit Garden."
"Poultry on the Farm."

HARKNESS, A. D., Jordan Harbor.—Mr. Harkness was trained for two years in the O.A.C., from which he won an "Associate" diploma. With this exception he has lived on the farm all his life, and his advice *re* the dairy and orchard is indeed valuable.

Subjects:—

"How to Improve the Dairy Herd."
"Care of Milk for Cheese and Butter Making."
"Mixed Farming—Dairy, Hogs, Fruit and Poultry."
"How I Have Made a Success of Raising Poultry."
"Cultivation of the Soil."
"Planting and Care of the Orchard for First Ten Years."

HARKNESS, R. E., Irena.—Mr. Harkness has specialized in Fruit-Growing and Bee-Keeping; two branches which can be made most profitable in practically all sections of the Province. Mr. Harkness has had some experience in local Institute work and there is no doubt, but that his services will be appreciated in the larger field.

Subjects:—

"Orchard-planting, Pruning, Cultivating."
"Orchard-spraying, Thinning, Packing, Marketing."
"Bee-Keeping."
"The Farmer's Garden."

HILBORN, J. L., Leamington.—For a long time the name of Mr. Hilborn has been familiar as one of the leading fruit growers in Lambton County. He owns a splendid fruit farm on the north shore of Lake Erie, which bears every evidence of thrift and prosperity. His buildings are neatly painted, and no weeds are allowed to grow to the detriment of the crops. A 6,000-gallon tank holds water which is used for irrigation. Altogether, he is an up-to-date fruit grower and gardener whose services will be appreciated by our Institute members.

Subjects:—

"Growing Early Vegetables for Commercial Purposes."
"Best Methods for Successful Peach Growing."
"Cement for Building Purposes."
"The Farmer's Fruit and Vegetable Garden."
"How to Make Apple Growing Profitable."

Evening: "Getting Pleasure and Profit Out of Farm Life."

HUME, ALEX., Menie.—Mr. Hume is a noted Ayrshire breeder in the County of Northumberland. He is also a prominent prize-winner at our fall fairs. He is well prepared to discuss the dairy herd from all standpoints, and his services are much valued.

Subjects:—
"Building up a Dairy Herd—Breeding, Selection, Feeding and Care."
"Stable Construction and Water Supply."
"Growing of Suitable Crops for Dairy Herd."
"The Bacon Hog."
"Rotation of Crops and Application of Manure."

Evening: "Advantages of Farm Life."

HYATT, J. W., West Lake.—Mr. Hyatt has done much for the advancement of agriculture in his district, devoting much attention to the improvement of farm crops and the building up of the dairy herd. He has made a study of the growing of crops for canning purposes, and has been one of the moving spirits in the establishment of a local co-operative canning factory. Mr. Hyatt is a good public speaker and has the faculty of imparting his information in an attractive and forceful manner.

Subjects:—

"The Building up of the Dairy Herd."
"Soiling Crops for Farm Animals."
"The Market End of Farming."
"The Selection of Seed."
"Destruction of Weeds and General Cultivation."

Evening: "A Well-kept Farm and Its Influence upon Home Life."
"Beneficial Effects of Living Close to Nature."

JAMES, D., Thornhill.—Mr. James took possession of the farm on which he now resides some thirty-four years ago, and has succeeded in converting it from a bed of weeds and rubbish into a clean, systematic and well-equipped farm. He is a believer in general farming, as will be seen from his list of subjects. Some thirty years ago Mr. James and his neighbors formed an association and held weekly meetings throughout the winter. At that time he began the collection of a library, and to-day has one of the best-equipped agricultural libraries to be found among practical farmers.

Subjects:—

"Destruction of Weeds."
"Home Dairying.'
"Growing and Curing Alfalfa."
"Corn for Ensilage."
"The Farmer's Wood Lot."

Evening: "Some Mistakes Made by Farmers."
"Hits and Misses."

JARVIS, L. G., Grimsby.—Mr. Jarvis is a poultryman of wide experience, having acted as judge at most of the leading Canadian and American exhibitions. He is at present engaged in the production of poultry and eggs for market. He can be depended upon to have up-to-date information along all lines of egg and poultry production.

Subjects:—

"Incubation."
"The Fattening and Marketing of Fowl."
"Housing of Poultry."
"Winter Eggs."
"The Farmer's Fruit and Vegetable Garden."

JOHNSON, D., Forest.—Mr. Johnson, President of the Co-operative Fruit Growers' Association of Ontario, has studied fruit-growing methods and marketing in California, Oregon, Washington and British Columbia, and visited most of the British and American markets. He is a capable and successful grower and shipper, and intensely interested in advancing the cause of the fruit industry in his own Province.

Subjects:—

"Care and Cultivation of Fruit."
"Insects and Fungi Affecting Fruit and Trees."
"The Spraying of Fruit."
"Marketing and Shipping of Fruit."
"Co-operation."
"Growing and Marketing of Berries."

Evening: "Fruit Growing in California and Oregon."

JONES, HAROLD, Maitland.—Mr. Jones is one of the pioneers who redeemed the reputation of the St. Lawrence Valley as a fruit district. He has made the "McIntosh Red" apple world-famous. Through the Provincial Fruit Experiment Station, located on his farm, he has demonstrated the advantages of clean cultivation, proper fertilization and persistent spraying. The heavy yield which his crops have made when other farmers have met failure amply bears out the value of his principles.

Subjects:—

"Cultivation and Care of Orchards."
"Injurious and Beneficial Insects."
"Fungi-Spraying Mixtures and their Application."
"Successful Potato Growing and Treatment for Blight."

Evening: "Our Bird Friends."

KERR, W. J., Woodroffe.—Mr. Kerr operates one of the largest "small fruit" farms outside the Niagara and Essex districts, strawberries and raspberries being his specialty. He is thoroughly familiar with the conditions which surround the fruit industry in Eastern Ontario, and is now entering his sixth season in Institute work.

Subjects:—

"Care of the Farm Orchard."
"Commercial Fruit Growing."
"Short Talks on Poultry."
"Apples and Small Fruits."
"The Farmer's Garden."

Evening: "Beautifying the Home Grounds."
"Interesting the Young Folk in the Farm and Home."

KYDD, W. F., Simcoe.—Mr. Kydd has made a special study of horse-raising, as adapted to Ontario conditions. He is prepared to discuss the breeding and conformation of draft, carriage and saddle types. For two seasons now, Mr. Kidd has had charge of a number of demonstration orchards, in which the Fruit Branch has been most successful in showing farmers what can be done towards reclaiming orchards which have been neglected. The results have been most marked, and many farmers are cultivating, pruning and spraying with the best of results. Mr. Kydd will be prepared to give demonstrations in box or barrel packing, if the Institute officers so desire. Any of Mr. Kydd's fruit topics or the "Education of the Harness and Saddle Horse" are quite suitable for evening meetings.

Subjects:—

"Horse Raising in Ontario."
"Neglected Orchards."
"Pruning and Spraying."
"Packing and Marketing."
"Small Fruits."

LEWIS, F. M., Burford.—Mr. Lewis has had much to do, as secretary, with the success of the South Brant Farmers' Institute. He has followed farming all his life, and is the owner of a good orchard and pays special attention to the production of potatoes. His success as a feeder of steers and pigs for market has been marked.

Subjects:—

"Clovers, the Key to Successful Farming."
"Green and Barnyard Manure, Their Care and Application."
"Corn and the Silo."
"Seed Selection."
"Potato Growing."
"Apple Growing."

Evening: "Waste Places."

LEWIS, R. H., Box 212, Hamilton.—Mr. Lewis has followed vegetable and fruit growing in the vicinity of Hamilton for twenty-five years, and has had considerable experience in Institute work in the fruit sections of the Province. He has been employed by the Agricultural Department as an Inspector in the Fruit Branch.

Subjects:—

"Pruning, Cultivation and Spraying of Small Fruits."
"Vegetable Growing for the Home."
"Cultivation, Drainage and Soil Moisture."
"General Care of the Orchard."

Evening: "The Care of Farm Machinery."

MCCALLA, W. C., St. Catharines.—Mr. McCalla is one of the most progressive fruitmen in the St. Catharines peninsula. He has made a neglected farm produce a generous yield. Mr. McCalla has a very fine peach orchard, and he is an expert on potato growing. His methods are up-to-date, and he pays much attention to details. Mr. McCalla is a clear and impressive speaker.

Subjects:—

"Tomato Growing."
"Peach Growing."
"Business Methods for Fruit Growers."
"Soil Fertility and Commercial Fertilizers."
"Potato Growing."
"Canning Factory Crops."
"Orchard Management."

MCCALLUM, J. M., B.S.A., Shakespeare.—Mr. McCallum is a graduate of the O.A.C., and has, since his graduation, been putting into practice with good effect the lessons learned in his course. Mr. McCallum has been a most acceptable judge at the Fall Fairs, and has had experience in Institute work. He is a forceful and convincing speaker.

Subjects:—

"Growing and Selection of Seed Grain."
"The Corn Crop."
"Alfalfa and other Clovers."
"Soil Cultivation."
"The Draught Horse on the Farm."

Evening: "The Problem of Keeping Ontario Boys and Girls on the Farm."

MCCURDY, R. H., Vienna.—Mr. McCurdy is one of the up-to-date farmers of Elgin County. He has always taken a great pride in the beautifying of his own home surroundings and a deep interest in everything pertaining to the improvement of his crops and herds. Mr. McCurdy has practised general farming with fruit growing as a specialty, and is prepared to give some very interesting talks as indicated below:—

Subjects:—

"Farm Drainage."
"The Apple Orchard."
"Small Fruits for Home Use and for Market."
"The Short Rotation and Hoed Crops in Relation to the Weed Evil."
"Alfalfa."

MCDERMOTT, JAMES, Elmvale.—Mr. McDermott is a successful practical farmer, who has always been deeply interested in anything which meant the development of agriculture in his locality. He is President of the Local Farmers' Club, an indication of the respect in which he is held by his fellow-farmers. An experienced public speaker, he is able to state in a clear, forceful manner the lessons which he has learned from experience and observation.

Subjects:—

"Poultry Keeping on the Farm."
"Drainage."
"Selection of Seed:"

Evening: "How to Increase the Profits on the Farm."
"Our Opportunities."

MALLORY, FRED. R., B.S.A., Frankford.—Since graduating from the O.A.C., Guelph, Mr. Mallory has devoted his attention to practical work on the farm. He keeps a number of pure-bred Holstein cattle, and produces milk in large quantities. The success attending the application of scientific principles to the practical work of the farm has been demonstrated by Mr. Mallory, and he has much of interest and value for the tiller of the soil.

Subjects:—

"Dairy Farming."
"Silos and Silage."
"Clover."
"The Question of Plowing Deep or Shallow."
"The Farmer's Garden."
"Farm Surroundings."

MOOREHOUSE, R. L., Cairo.—Mr. Moorehouse is a successful young farmer, who has had the advantages of special training. He has already done acceptable work in the Local Institute and has assisted at special Judging Classes. He will be found a thorough master of the topics for which he is announced. Mr. Moorehouse will be prepared to give instruction in the judging of beef cattle and sheep.

Subjects:—

"The Breeding and Feeding of Beef Cattle."
"Sheep Raising."
"The Control of Soil Moisture."
"Tile Drainage."
"The Business End of Farming."

MURPHY, ROBT., Alliston.—Mr. Murphy has had many years' practical experience upon the farm; nor has he neglected his duty towards his county, having worked up from pathmaster on a side road to Warden of Simcoe County.

Subjects:—

"Soil Cultivation and Drainage."
"Loss and Gain as the Result of Seed Selection."
"Selection and Feeding of Beef Cattle."

Evening: "Shall our Boys and Girls Remain on the Farm?"

NASH, C. W., 94 Lee Avenue, Toronto, author of "The Vertebrates of Ontario," has an international reputation in natural history. He has long been an authority on birds, and has written bulletins for the Department of Agriculture and the Department of Education on this important subject. His talks deal also with plant and insect life, as well as the rearing and breeding of domestic animals. Probably there is no one on the staff who can better interest and instruct young people at Institute meetings than Mr. Nash.

Subject:—

"How Plants Grow."
"Stock Breeding."
"The Value of Our Birds."
"Our Insect Pests."
"Nature About the Farm."
"Farm Forestry."

PAGET, J. N., Canboro.—Mr. Paget is well known in dairy circles through his connection with the Dairymen's Association of Western Ontario. He has been either director or president for a number of years, and is now a member of the directorate. Mr. Paget is particularly well known in his own district for the aggressive and up-to-date methods he has adopted in conducting his dairy business. He is not only a thoroughly practical man, but is capable of presenting the results of his experience in a clear and forceful manner.

Subjects:—

"Care and Production of Milk."
"Profit and Loss in Dairying."
"Handling the Finished Product Until It Reaches the Consumer."
"The Growth of Alfalfa and its Importance to Dairymen."

Evening: "The Relation Which Should Exist Between Producer, Proprietor and Maker."

PEART, A. W., Burlington.—Mr. A. W. Peart is well known as one of the successful fruit men of the Burlington district. His many duties in a private and public capacity prevent him from undertaking much Institute work. His services are always sought for, and the instruction given is much appreciated by fruit men generally.

Subjects:—

"Apples, Pears, Plums, Cherries; their Varieties, Cultivation, Marketing, etc."
"Insects and Fungi Injurious to Orchards, and Methods of Combating Them."
"Underdraining."
"The Application of Fertilizers."

PEART, GRANT S., Burlington, Ont.—Mr. Peart of Burlington, is a graduate of the Ontario Agriculture College, and has had the advantage of extensive practical experience upon one of our best Ontario farms, both before and subsequent to his course at the College.

Subjects:—

"Insects and Fungi Attacking Fruit Trees; Methods of Control."
"Fertilizers, Natural and Chemical Manures, Where and Why to Apply Them."
"Under Drainage."
"The Apple Orchard."

PETTIT, MORLEY, O.A.C., Guelph.—Mr. Pettit is Provincial Apiarist and Lecturer on Bee Keeping at the Agricultural College. He has been eminently successful as a practical Bee Keeper and is a most capable instructor and public speaker. While Mr. Pettit is announced for only one topic, he is prepared to give practical addresses and take charge of discussions at either afternoon or evening meetings and can make the story of the bee most entertaining and profitable to both young and old at evening meetings.

Subject:—

"Bee-Keeping in Ontario."

PHILP, JNO. R., Maple Lane.—Mr. Philp is a practical farmer, and has for many years carried on farming operations on his 150-acre farm in South Grey. He is enthusiastic about the value of short rotation for combating weeds, and the appearance of his farm proves that he has made good use of the short rotation, as he has one of the cleanest farms in South Grey. Mr. Philp is also a well-known breeder of Shorthorn cattle and Leicester sheep. His past experience in public speaking enables him to present his subjects in a clear and forceful manner.

Subjects:—

"Clover."
"Soil Cultivation and Crop Rotation."
"Care and Application of Manure."

Evening: "Planting Trees and Beautifying the Farm."

PORTER, C. E., Appleby,—Mr. Porter, although a young man, has had full control of a large farm and valuable pure bred stock for a number of years. He was one of the leading prize-winners at the Canadian National Exhibition in 1911.

Subjects:—

"Types of Heavy Horses for Breeding Purposes."
"Care and Feeding of Brood Mares and Young Horses."
"Apple Growing, Reclaiming of Orchards; Spraying, Cultivation, etc."
"The Increased Profits of the Farm."

Evening: "Beautifying of Home and School Grounds."
"What is Worth While."

REED, DR. HENRY G., Georgetown.—Practical experience on the farm and an opportunity of studying agricultural conditions throughout the Dominion enables Dr. Reed to give a practical application of his scientific knowledge as a veterinary surgeon. He is specially at home in judging heavy and light horses, and is also a good judge of beef cattle. Dr. Reed is prepared to answer questions on "Breeding, Feeding and Care of Domestic Animals," and to give addresses upon the subjects indicated below. He has had wide experience in judging at fall fairs and Institute work, and his services have been uniformly acceptable. He will be engaged almost continuously in short course work this season.

Subjects:—

"The Influence of Natural Laws on the Breeding of Live Stock."
"Horse Breeding."
"Care and Feeding of Horses."
"The Horse's Foot in Health and Disease."
"Care of the Brood Mare and Her Foal."
"Parturient Diseases of Cattle."

Evening: "The Training of Young Horses."

RENNIE, SIMPSON, 454½ Ontario Street, Toronto.—The name of Rennie needs no introduction to the farmers of Ontario. Mr. Simpson Rennie was connected with the Agricultural Club formed in Scarboro Township thirty-five years ago, and attributes much of his success to the knowledge gained from the papers and discussions given at the club long before the establishment of Farmers' Institutes. Mr. Rennie is one of the best authorities we have on all lines of general farming. His farm won the gold medal in the "Good Farms Competition" in Ontario in 1883, and in 1886 won the first sweepstake prize open to all Ontario.

Subjects:—

"Weeds and How to Eradicate Them."
"Rotation and Cultivation of Crops."
"How to Improve Seeds and Grain by Selection."
"Cultivation of Roots and Corn."

RITTENHOUSE, S. H., Jordan Harbor.—Mr. Rittenhouse is one of the successful fruit growers who has specialized in strawberries. He has made a study of drainage with a view to orchard improvement. He is prepared to give much valuable advice gleaned from his own experience.

Subjects:—

"Strawberry Growing."
"The Commercial Peach Orchard."
"Tile Draining."

Evening: "Making Farm Life Attractive."

ROBERTSON, GEO. A., B.S.A., St. Catharines.—Mr. Robertson, after graduating from the O.A.C., spent some years with the most prominent fruit growers in the Grimsby section. He then took up land for himself near St. Catharines, and has been very successful in the growing of all kinds of fruits, especially sweet cherries. His efforts along poultry lines have met with equal success, and have led him to believe that the combination of fruit and poultry yields surer and more abundant returns than the fruit business alone.

Subjects:—

"Raspberries, Peaches, Cherries, Pears, Tomato Growing, etc."
"Spraying."
"Underdraining."
"Poultry—Incubation, Breeding, Trap Nests, Housing, Feeding, Preparation for Showing, Co-operation in Marketing, etc." Demonstrations in comparison of conformation, also in trap nests, leg bands and toe punches.

ROCHELEAU, DENIS, Tecumseh.—Mr. Rocheleau is one of the successful farmers of Essex County, and has been particularly successful in the production of market garden crops. His experience as a dairyman and in general farm work renders his instruction along these lines of special value. Mr. Rocheleau is able to give instruction in both French and English.

Subjects:—

"Home Dairy Work."
"The Farmer's Fruit and Vegetable Garden."
"The Growing of Potatoes."
"Cultivation of the Land."

SHAW, J. C., Norwich, Ont.—Mr. Shaw is a successful farmer in the County of Oxford, having removed from the County of Wentworth some few years ago. Since coming to South Oxford he has demonstrated that money can be made from a run-down dirty farm, at the same time that it is being put in first-class condition. Mr. Shaw's advice on this line of work, as well as upon general farm topics should prove of interest and benefit to the districts which he may visit. Mr. Shaw has won medals for excellence in quality of farm products as well as for the appearance on his farm.

Subjects:—

"Seed Improvement and the Eradication of Weeds."
"Underdraining."
"How to Increase the Production of the Average Farm."
"Ontario for the Farmer."

SHEARER, W. C., Bright.—Dairying is the particular department of farming in which Mr. Shearer has been eminently successful. He has kept records of the feed consumed by the hogs produced, and will be able to give information of much value regarding the feeding of sweet pasteurized whey in conjunction with other foodstuffs. He is thoroughly practical, a good speaker, an Institute man of experience for some years past, and a most acceptable delegate. As will be seen from his subjects, Mr. Shearer is also prepared to discuss the bacon, seed and corn questions.

Subjects:—

"Production and Care of Milk and the Pasteurizing of Whey."
"Rotation of Crops and Selection of Seed."
"Breeding and Feeding the Bacon Hog."
"The Dairy Cow for Profit."
"Growing Corn Successfully."

Evening: "Successful Agriculture."

SHERRINGTON, A. E., Walkerton.—Mr. Sherrington is well up in matters pertaining to fruit culture, having conducted a fruit experiment station for the Ontario Department of Agriculture for some years, and speaks with authority on varieties, pruning, cultivation, spraying, packing, etc.

Subjects:—

"Orchard Management."
"Planting, Pruning and Grafting."
"Spraying as a Preventive of Insects and Fungus Diseases."
"Co-operative Marketing of Farm Products."

"Conservation of Soil Moisture."
"Selection of Seed Grain and the Eradication of Weeds."
"The Importance of Uniformity, Quantity and Quality in Farm Products (afternoon or evening).

Evening: "The Farmer's Fruit Garden."
"Beautifying a Farm Home."

SILCOX, F. H., Iona.—Mr. Silcox is a farmer's son and has managed a 100-acre farm of his own for the last 12 years. He is a graduate of the Ontario Agricultural College and an ex-President of the West Elgin Farmers' Institute. He has had a life-long experience in growing Alfalfa, improving worn-out, weedy land, and in breeding and marketing Light Horses, Leicester Sheep and Jersey Cattle.

Subjects:—

"Alfalfa Growing."
"Intensive Farming on 100 Acres."
"A Few Phases of the Light Horse Industry."
"Seed Demonstration."
"The Farm and Home."

SMITH, ROBT. B., Columbus, Ont.—Mr. Smith, Jr., has had extended experience in the selection, care and handling of a large number of imported horses, and has thereby gained much knowledge which should prove of great value to the farmers of Ontario. Mr. Smith will be prepared to give demonstrations in the judging and desirable conformation of heavy horses at live stock judging classes. He will also be prepared to give addresses upon the following topics:—

"The Feeding of Horses."

Evening: "High Ideals in Farm Life."

STEVENSON, R. S., Ancaster.—Mr. Stevenson is one of the oldest Institute workers in Ontario. Being a practical dairyman and breeder of dairy cattle, he has been identified with advanced dairy work in Ontario for a long time. During the past few years he has acted as judge of live stock at many fall fairs, and has given excellent satisfaction. No matter where he goes, Mr. Stevenson is always welcome, and is recognized as a man who thoroughly understands the work he undertakes to discuss.

Subjects:—

"A Practical Talk on Dairy Cows, Breeding, Selecting, etc."
"Growing the Corn Crop and Handling it to the Best Advantage."
"How to make Dairying more Profitable on the Average Farm."
"The Growing of Root Crops."
"The Cream Separator on the Farm."

Evening: "The Farm Water Supply.

STUART, J. C., Dalmeny.—Mr. Stuart is a young man who has made a decided success of "dairying," "poultry raising" and "bee-keeping," and is a speaker of considerable experience.

Subjects:—

"The Breeding and Care of Dairy Cattle."
"Feeds and Feeding."
"Corn and Silo."
"Control of Soil Moisture."
"The Rotation of Crops."
"Alfalfa."
"Poultry Raising."
"Making Life in the Country Most Attractive."

SWALE, CECIL, Wiarton.—Mr. Swale is enthusiastic about corn ensilage. He has found it a paying feed, and has made many converts to its use in his locality. Mr. Swale is one of Ontario's most successful potato growers.

Subjects:—

"Corn, Mangels and Hay."
"Modern Potato Culture."
"Rearing and Feeding of Sheep."
"Clover Production and Destruction of Weeds."
"Care of Our Own Forests."
"Beneficial Birds of Prey, and Poultry Production."

WHITE, R. E., Balderson.—Mr. White is one of the young progressive farmers of Lanark County, and one who takes a deep interest in anything which tends to make towards the advancement of the farmers. He has been active in Institute and Farmers' Club work.

Subjects:—

"Tillage and Rotation of Crops."
"Conservation of Soil Moisture."
"Corn and the Silo."
"Soiling Crops and Their Importance."
"The Breeding, Feeding and Selection of Beef Cattle."
"The Dual Purpose Cow from Birth to Maturity."

Evening: "How Can the Farmer Spend his Winter Months to Best Advantage?"

WIDDIFIELD, J. W., B.S.A., Uxbridge.—Mr. Widdifield has, since his graduation from the O.A.C., managed a farm successfully in Ontario County. Mr. Widdifield is much sought after to assist in local Institute work, and his success as a practical farmer has led the Department to secure him for regular Institute work.

Subjects:—

"Increasing and Preserving Soil Fertility."
"Clover, Corn and Roots."
"Implements of Cultivation and Their Proper Uses."
"How to Preserve a Moist Soil in a Dry Season."
"Destruction of Noxious Weeds."

Evening: "Nature Study."
"The Poetry of Farm Life."

YOUNG, R. M., Carlaw.—Mr. Young has demonstrated his usefulness as an Institute worker in his local society, having held office and also given lectures on agricultural matters. He is a practical farmer of wide experience.

Subjects:—

"Soil Moisture."
"Cultivation and Rotation of Crops."
"Selection and Care of the Dairy Cow."
"Management of a Flock of Sheep."

Evening: "Canadian Farm Homes."

DISTRICT REPRESENTATIVES OF THE DEPARTMENT OF AGRICULTURE.

The Provincial Departments of Agriculture and Education have co-operated in providing specialists to give instruction in agriculture in the counties indicated below. In addition to giving instruction in agriculture in the school, the representative is in charge of an office used by the farmers of the district for agricultural meetings and consultation with the representatives upon all matters of interest to them as farmers. The representatives make it their business to assist in all lines of agricultural work throughout their respective districts, and Institute Secretaries are requested to communicate with the Representatives concerned regarding topics to be announced for the meetings to be held this winter. Secretaries should not announce a District Representative for meetings until they have corresponded with him regarding the matter and secured his promise to attend.

The representatives are ready to lend their influence in establishing local Farmers' Institute Clubs, and an opportune time to make a start in this direction is at the time of the Winter Institute meetings.

County.	*Representative.*	*Residence.*
Carleton	W. D. Jackson	Carp.
Dufferin	H. A. Dorrance	Orangeville.
Dundas	A. D. Campbell	Morrisburg.
Elgin	F. M. Clement	Dutton.
Essex	W. E. J. Edwards	Essex.
Fort William and District	G. W. Collins	Fort William.
Glengarry	N. D. McKenzie	Alexandria.
Grey	H. C. Duff	Markdale.
Hastings	A. D. McIntosh	Stirling.
Lambton	S. E. Todd	Petrolea.
Lanark	R. S. Hamer	Perth.
Norfolk	J. E. Smith	Simcoe.
Northumberland & Durham	R. S. Duncan	Port Hope.
Ontario	J. H. Hare	Whitby.
Peterborough	E. S. Hopkins	Norwood.
Prince Edward	A. P. MacVannel	Picton.
Sault Ste. Marie & District	A. S. Smith	Sault Ste. Marie.
Simcoe	J. Laughland	Collingwood.
Victoria	D. A. Mackenzie	Lindsay.
Waterloo	F. C. Hart	Galt.
York	J. C. Steckley	Newmarket.

WOMEN'S INSTITUTE LECTURERS AND THEIR SUBJECTS, 1911-12.

BACKUS, DR. ANNIE, Aylmer.—Dr. Backus brings her medical training and practice, as well as her experience in country life, and places them at the disposal of the women of the Province. She is eminently practical, ready and willing to help womankind. She has been closely identified with Institute work throughout the Province, and especially in her own riding, for seven or eight years. Dr. Backus' lectures on "Physical Development of the Child" and "Poultry Raising" will be illustrated.

Subjects:—

"Hygiene of the Home and Aids in Nursing."
"Consumption and its Prevention."
"The Importance and Meaning of Woman's Work."
"Training in the Home."
"Education of Girls."
"Physical and Mental Harm of Fault-finding."
"Poultry Raising."—Illustrated.
"The Physical Development of the Child."—Illustrated.

BRETHOUR, MRS. J. E., Burford.—Mrs. Brethour has been a most progressive and successful district and branch officer. She will be remembered as one who has taken part in our annual Convention, and her advice and suggestions regarding Institute work will be found helpful. Her addresses are animated, interesting and instructive, and are especially helpful to those who are responsible as officers of the Institutes.

Subjects:—

"Simple Entertaining in the Country."
"Homely Wrinkles for Housekeepers."
"Is a Woman's Time Worth Anything?"
"The Evolution of the Country Woman."
"How to Make an Institute a Success."
"Books: Our Friends or Enemies?"

CAMPBELL, Miss S., Brampton.—Miss Campbell is one of those speakers who leave audiences enthusiastic in pursuing definite lines of work. She has a wide range of those subjects which are most needed by the woman and girl on the farm. Her success in extending the Women's Institute throughout Peel County has been most marked, and her advice to officers should prove of great value.

Subjects:—

"The Ideal Home."
"A Young Lady's Accomplishments."
"The Influence of Women."
"The Judicious Housekeeper and Homemaker."
"Home and School."
"Our Fair Dominion."
"Demonstrations in Needlework."
"Emergency Treatment."

FARLEY, MRS. W. W., Smithfield.—Mrs. Farley is the mistress of a model country home and has been instrumental in organizing a number of branches in her district, East Northumberland. She has already attended a few Institute meetings as a Departmental delegate, and the appreciation expressed by the Institutes visited insures successful meetings where she is the speaker.

Subjects:—

"Home Nursing."
"Care and Training of Children in the Home."
"Helps Over Hard Places in the Household."
"Flowers for the Farm Home."
"Canning of Fruits, Vegetables and Meats in the Home."

Evening: "The Macdonald Institute, Guelph."

FERGUSON, MRS. W. B., Strathroy.—Mrs. Ferguson, foremrly Miss Agnes Smith, of Hamilton, since giving up work as a Departmental delegate some four or five years ago, has been active in local organizations, and the Department is fortunate in securing her for a regular series of meetings this season. Scientific training in Domestic Science and Dairying, practical experience on the farm, and her ability to present information in a pleasing, forceful manner insures effective work on the part of Mrs. Ferguson.

Subjects:—

"The Conveniences and Labor Saving Devices we may have in our Homes."
"Health a Duty."
"The Place our Institute may fill in our Lives."
"The Power and Value of the Ideal in our Lives."

GILHOLM, Miss B., Bright.—Miss Gilholm has been an efficient officer of the District Women's Institute of North Oxford, and is able to render much assistance to officers of both district and branch Institutes. Miss Gilholm has taken the regular creamery course at the Guelph Dairy School and holds a specialist's certificate in buttermaking, as well as a diploma in the theory and art of buttermaking. Miss Gilholm's knowledge and appreciation of country life enables her to impart information in a manner much appreciated by the members in general.

Subjects:—

"The Plant and its Relation to the Dairyman."
"Will the Dairy Cow Remove the Mortgage?"
"Opportunity."
"Thoughts of Old Friends and New."
"Canadian Women."

GRAY, Miss G., 650 Bathurst St., Toronto.—Miss Gray needs no introduction to the majority of Institute members in Ontario, as she has visited nearly all sections in which the work has been organized. She has devoted several seasons to Institute work in New York State. She is a thorough master of the subjects announced and presents her information in a clear, forceful and attractive manner.

Subjects:—

"Human Nutrition."—Illustrated by Food Chart.
"Cuts and Preparation of Meats."
"Dietetic Value of Vegetables and Fruits."
"How to Improve Home Conditions."
"Interior Decorations of the Home."—Illustrated.
"Things Worth While."
"Our Assets."
"Woman's Place in Primitive and Present-day Culture."

HAMILTON, DR. L. S. M., 68 Macpherson Ave., Toronto.—Dr. Hamilton is a graduate of Toronto University and secretary of the Canadian Purity Association. She is a speaker of experience and presents her subjects in a bright, interesting and instructive manner.

Subjects:—

"The Health of Woman."
"A Child's Rights."
"Eliminative Functions of the Body."
"Teaching Life Truths.'

HOTSON, MISS A. M., Parkhill.—Eight years' experience in kindergarten work has impressed upon her the needs of children and the necessity for common-sense in supplying these needs in their life both at school and at home. Miss Hotson took her post-graduate work in Chicago, where she lived in Gertrude House, and had the opportunity of seeing the effect of residence life on girls and the value of the Home Makers' and Arts Courses for young women.

It was largely through Miss Hotson's influence that lecture and rest rooms have been provided for the use of the Women's Institute at Parkhill. A mothers' and babies' room has been provided, small tables, chairs and toys being furnished for the children. Miss Hotson will have many suggestions of value regarding programmes, evening lectures, co-operation of mothers and teachers, etc.

Subjects:—

"Citizenship."
"The School: Its Relation to the Community."
"The Family as a Shaping Influence."
"Home Problems (Concerning Children)."
"Story Telling."
"Childrens Ideals."
"The Making of a Citizen."

HOLDSWORTH, MISS MAUD, "Hythe Farm," Port Hope.

Subjects:—

"For Home and Country."
"Different View of Life."
"Eyes That See."
"Plain Sewing and Home Dressmaking."—Patterns shown.
"True Politeness and What it Means to Each of Us."

HUNTER, MRS. W. J., Brampton.—Mrs. Hunter is one of our progressive Women's Institute members and has been of great assistance as a district officer in furthering the work in Peel County. She is mistress of a fine country home and has been active in local Institute work as well as assisting at some of our Annual Conventions and attending meetings in various sections of the Province.

Subjects:—

"Systematic Housekeeping."
"The Benefits of Institute Work."
"Training Children in the Home."
"A Plea for the Boy."
"Don't Worry."
"Little Things that Make Home Happy—or Otherwise."

MacMurchy, Dr. Helen, 133 Bloor St. E., Toronto.—Dr. MacMurchy's professional duties prevent her from devoting much time to Women's Institutes. However, the limited time which she gives is much appreciated by the Department and by the Institute members. Her addresses are pointed, full of enthusiasm, and always adapted to the needs of the locality visited.

Subjects:—

"Typhoid Fever."
"Accidents."
"Nerves."
"Tuberculosis."
"Infant Mortality."
"The Day's Work."

McAlpine, Dr. Margaret, 619 Bathurst St., Toronto.—Dr. McAlpine is a practising physician of Toronto and has had the valued experience of lecturing before a great many organizations in that city. She has also had the advantage of a post-graduate course in medicine in Philadelphia. Many sections of the Province have profited by her addresses, and she is always a welcome delegate.

Subjects:—

"Mental Culture."
"The Romance of Medicine."
"How to be Well and Happy."
"Heredity."
"Perfect Womanhood."
"Work and Recreation."
"Emergency Treatment."
"Fresh Air and Tuberculosis."
"Home Hygiene."

McTavish, Mrs. D., Port Elgin.—We are fortunate in securing the services of Mrs. McTavish, who is so well and favorably known among the Institutes, to attend a few meetings this year. Her wide experience in Institute work, both as a local officer and a Departmental delegate, enables her to render valuable service to the Institute officers who are looking for suggstions as to how to make the work most successful.

Subjects:—

"Some Economies We Should Practise."
"Training Our Future Housekeepers."
"Means of Preserving Health."
"Care and Training of Children."

McTurk, Mrs. E. B., Lucan.—Mrs. McTurk has had special training as an optician and is well and favorably known as an enthusiastic, efficient worker in the local organizations. She attended a number of Institutes, where her services were much appreciated, a year ago. Her subjects speak for themselves.

Subjects:—

"The Care of the Eyesight."
"Mothers' Influence."
"To Our Girls."
"Home Care of Sick and Visiting Sick."
"Canning and Preserving."
"What That Other Institute is Doing."

Norman, Mrs. M. N., 616 Bloor St. W., Toronto.—Parenthood and racial ethics constitutes one of the most vital, fundamental and, strangely enough, one of the most neglected of all important themes. Mrs. Norman brings to its exposition practical views, clear enunciation, choice English with chaste diction of unusually happy style. Her personality as a speaker is particularly attractive. Her teaching appeals to the judgment as definite, convincing and final.

Subjects:—

"Health in Home and School (Sanitation, Food, Fresh Air, Sunlight, etc.)
"Making good citizens (training of children of paramount importance, etc.)
"Democracy in the Home (need to make every member of home responsible, need of co-operation, etc.)
"The Value of Good Cheer."

PARSONS, MRS. HORACE W., "Stewartleigh," Forest.—Mrs. Parsons is Convener of the Press Committee of the National Council of Women, in which organization she has taken an active interest for some years. Women's Institute work appealed to her and she has devoted much energy and thought in preparing addresses of vital interest to all women. Her wide experience in society work places her in a position to give valuable advice to the officers of the Institutes.

Subjects:—

Afternoon: "The Child and the Story."
"Marriage."
"Canadian Laws Concerning Women and Children."
"Books of to-day and their influence."
"First Aid in Emergency."
Evening: "Canadian Writers."
"Our Inheritance."
"Conservation."
"O, Canada."

POWELL, MISS M. V., Box 453, Whitby.—Miss Powell is a practical housekeeper, and has kept in close touch and sympathy with home life in the country. The logical, pleasing and forceful manner in which Miss Powell presents her very important addresses appeals very strongly to her audiences.

Subjects:—

"Character Building."
"Refinement in the Home."
"How We Can Help Our Girls, and How They Can Help Us."
"Canada Our Home."
"Value of Cheerfulness."
"Demonstrated Talk on Plain and Fancy Sewing."

REYNOLDS, MISS LULU, Scarboro Junc.—Miss Reynolds has had extended experience as Secretary of the East York Women's Institute. Institute officers will find her advice and suggestions bearing upon Institute methods and work of special interest and value.

Subjects:—

"Household Management."
"Foods—Their Different Constituents." Illustrated by chart.
"Horticulture."
"Character Building."
"How to Make the Institute a Success."
"The Twentieth Century Woman's Accomplishments."

ROBSON, MISS ETHEL, Ilderton.—Miss Robson is a firm believer in the advantages of country as compared to city life, especially when one takes an active interest in bee-keeping or some of the lighter branches of farming. Miss Robson has addressed public gatherings with great acceptance, and her services will certainly be much appreciated by the Institute members.

Subjects:—

"The Honey Bee."
"Bee Keeping for Women."
"Economic Problems of the Country Girl."
"Literature and Life."

ROSE, MISS LAURA, Guelph.—Miss Rose needs no introduction to the Women's Institutes of Ontario. Her ahlity as a public speaker and her wide knowledge of affairs place her in a position to render the best services to the Institutes. She has charge of the Home Dairy Department of the Agricultural College, and has instructed many farmers' sons and daughters in the art of buttermaking. Miss Rose has travelled from the Atlantic to the Pacific iu connection with Institute and other instruction work along homemaking and dairy lines. Her practical and carefully thought out addresses, delivered in a pleasing and forceful manner, have placed her in the front rank of Institute workers. Miss Rose's services have been sought by other Provinces and States. She bas done Institute work in New York State, and has organized a number of societies in British Columbia. Miss Rose is well known as a writer of dairy topics and has recently published a book on "Farm Dairying."

Subjects:—

"The Dairy Cow."
"Difficult Churnings—Defects in Butter—Reasons and Remedies."
"Milk—Its Composition, Care and Use."—Illustrated.
"Ice Cream, Sherbets, Lactose; (Frozen Dishes)."—Demonstrated, if desired.
"Our Ways (Yours and Mine) of Doing Housework."
"The Influence of Environment."

SHAW, MRS. THOS., Hespeler.—Mrs. Shaw has been an enthusiastic worker in Local institutes as well as a representative of the Agricultural Department in this Province and Nebraska. Her practical experience and tact iusure addresses of value and interest.

Subjects:—

"Beneficial Suggestions to Branch Institutes."
"Worry, Work, Waste."
"Some More Things Women Should Know."
"Listen, Learn and Love."
"What is Worth While."
"Some Advantages of a Country Home."

SMILLIE, MISS E. E., 1075 Dovercourt Road, Toronto.—Miss Smillie is a graduate nurse with considerable practical experience in her profession, and has also had the advantage of two seasons of Women's Institute work.

Subjects:—

"Emergency Treatment."
"Home Nursing."
"Personal Hygiene and Health in the Home."
"Disease Germs."
"Diet in Illness."
"Canadian Literature and Writers."

SMILLIE, DR. JENNIE, 1075 Dovercourt Road, Toronto.—Dr. Smillie is a graduate in medicine at the University of Toronto, 1909. She has also taken a post-graduate course in Philadelphia. Her medical training, together with her experience of several years as a public school teacher in country places, fits her to render service which should be much prized by the Institutes.

Subjects:—

"Disease Germs."
"Prevention and Treatment of Tuberculosis."
"Hints for the Sick Room."
"Bandaging and Changing Bedclothing."—Demonstrated.
"Personal Hygiene and Health in the Home."
"Emergency Treatment."
"Infectious Diseases of Childhood."

WATTS, MRS. F. W., Clinton.—Mrs. Watts, an experienced housekeeper, has had marked success both as an Institute officer and lecturer. She is a forceful, pleasing speaker, whose addresses have been much appreciated. She is prepared to assist the Institutes by rendering musical selections.

Subjects:—

Afternoon.

"Would You be Beautiful?"
"Home Nursing."—Demonstrated.
"What Mothers and Daughters Should Know and Remember."
"Women's Institute Helps."

Evening.

"Why Is It?"
"Happiness in the Home."

REPORT

OF THE

WOMEN'S INSTITUTES

OF THE

Province of Ontario

1911

PART I.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

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To the Honourable JOHN MORISON GIBSON, K.C., LL.D., etc., etc., etc.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Women's Institutes of Ontario for 1911.

Respectfully submitted,

JAMES S. DUFF,
Minister of Agriculture.

TORONTO, 1911.

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Women's Institutes of Ontario, 1911

To the Honourable Minister of Agriculture:

SIR,—I have the honor to submit, herewith, the annual report of the Women's Institutes of Ontario, Part I, consisting of proceedings of Annual Convention held in November, 1910, papers prepared specially for this volume, statistical statement for the year ending with May, 1911, and list of officers for the year 1911-12.

New sections are all the time being claimed by the Women's Institutes. Up to now we have six hundred and thirty-four branches representing ninety-seven electoral districts, with a total membership of 19,091. During the year we have furnished lady speakers for 1,055 meetings and the Institutes themselves have held 5,378 monthly meetings, addressed for the most part by local talent. At these monthly meetings the Institutes have not only considered topics bearing directly upon household management and work, but have given ever increasing attention to community interests, and altogether have done much to raise the standard and increase the attractiveness of rural life in Ontario. Women of high ideals and special training along various lines have been engaged as lecturers by the Department of Agriculture and the success attending the work is due in a large measure to the honesty of purpose, capabilities and tact of these women. The staff includes capable, experienced housekeepers who have had no advantage beyond that of practical experience in their own homes, domestic science graduates, medical doctors, nurses, teachers, graduates of dairy schools, poultry specialists, etc.

Many of the successful Institutes attribute their advancement to the special features of work undertaken. Special features of work are mentioned in the address of the Superintendent at the Annual Convention (see page 16).

While we do not wish the Institutes to get beyond the discussions of household topics, we strongly advise that some time be spent in special lines of work. Every Institute should be able to undertake something which will appeal to the general public and which will serve, not only to bind the members more closely together, but to bring the Institute into greater prominence in the locality.

The Institute has already done much towards perfecting home-making in this Province by guiding its members in a more judicious selection of household supplies, simplifying methods of work, widening the interests of the women, and providing healthful social advantages, where, in many cases, isolation was the rule. The young, middle-aged and old all have a part and place in the Institute.

Other provinces are copying Ontario in her Women's Institute work. During the past year New Brunswick, Manitoba, Saskatchewan and British Columbia have emphasized this feature of work. Future Canada will owe much to Women's Institutes, which stand for efficiency in home-making and home-keeping, a healthful and sound sociability, a stronger and purer community life, and all that tends to the uplift and happiness of the women and girls in the home.

The success attending Women's Institute work is largely due to the hearty and capable assistance of officers and members who are not only doing their part to make their local organizations of the greatest good to the greatest number, but who are doing much to extend the work to outlying districts.

Respectfully submitted,

GEO. A. PUTNAM,

Superintendent.

Parliament Buildings, Toronto, 1911.

Institute District.	Membership.	Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.					Expenditure.							
					Cash on hand per last Report.	Members' fees.	Grants.	Miscellaneous.	Total receipts.	Expense for meetings.	Officers' salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' expenses and wages.	Books and periodicals.	Miscellaneous.	Total expenditure.	Balance on hand.
					$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Amherst Island	51	11	173	13	9 13	10 50	20 00	86	40 49	.....	9 50	1 60	.....	2 00	5 08	4 60	22 78	17 71
Brant, N	287	65	2,003	113	61 68	78 75	50 00	78 10	268 53	18 75	25 50	8 68	13 00	2 25	24 95	38 56	131 69	136 84
Brant, S	184	70	1,706	96	81 34	62 00	71 00	22 08	236 42	21 55	17 50	12 99	18 97	23 00	5 58	53 61	153 20	83 22
Bruce, C	166	70	1,443	192	67 90	44 50	81 00	25 08	218 48	19 25	29 70	14 07	16 05	29 65	4 79	44 05	157 56	60 92
Bruce, N	132	70	974	76	50 35	39 25	59 00	247 31	395 91	3 75	16 50	11 05	8 55	5 40	6 90	257 95	310 10	85 81
Bruce, S	169	44	1,576	53	111 95	43 25	59 00	65 82	280 02	12 35	14 00	5 00	7 25	28 20	70	76 56	144 06	135 96
Bruce, W	121	43	1,111	60	57 14	31 00	71 50	13 40	173 04	11 05	25 00	7 52	17 45	19 85	6 80	36 70	124 37	48 67
Carleton	185	55	1,481	62	49 76	44 00	45 00	24 75	163 51	11 00	.....	7 76	10 75	10 95	1 25	32 71	74 42	89 09
Dufferin	258	132	2,448	168	88 59	63 25	96 00	229 50	477 34	28 22	40 65	16 35	38 92	21 35	25 34	93 20	264 03	213 31
Dundas	183	55	1,256	77	79 23	43 25	50 00	59 33	231 81	18 20	16 50	18 51	21 30	8 15	8 33	64 97	155 96	75 85
Durham, E	443	82	1,763	51	135 52	101 00	92 00	160 08	488 60	10 75	20 90	10 41	14 09	29 15	88	248 17	334 35	154 25
Durham, W	239	58	1,560	109	92 59	59 50	81 00	95 86	328 95	11 17	24 50	11 16	17 00	6 95	79 95	68 16	218 89	110 06
Elgin, E	207	69	2,393	113	211 49	48 75	81 00	195 05	536 29	27 08	35 50	6 99	23 55	10 50	1 65	145 03	250 30	285 99
Elgin, W	113	32	919	43	41 92	28 75	53 00	6 02	129 69	19 50	10 00	2 22	7 35	8 10	1 00	31 68	79 85	49 84
Essex, N	193	69	1,743	95	51 57	51 50	56 00	122 25	281 32	13 29	26 60	9 37	9 60	4 10	1 95	40 40	105 31	176 01
Essex, S	274	72	2,048	99	89 37	72 50	56 00	270 19	488 06	21 30	32 80	12 30	20 00	5 83	28 99	205 27	326 49	161 57
Frontenac	45	18	419	17	.....	11 00	22 00	27 80	60 80	13 00	1 30	3 75	2 00	.....	90	2 50	23 45	37 35
Glengarry	101	26	1,250	32	.....	25 00	22 00	11 40	58 40	12 25	.....	4 52	6 07	2 00	60	14 30	39 74	18 66
Grenville, S	33	16	331	26	6 31	7 75	22 00	.....	36 06	.....	.....	1 66	1 50	4 00	.....	2 50	9 66	26 40
Grey, C	432	176	3,715	258	172 61	105 40	130 00	326 77	734 78	36 45	47 50	15 29	38 15	32 55	48 25	293 87	512 06	222 72
Grey, N	229	88	1,986	180	78 07	53 50	78 00	41 80	251 37	25 61	34 50	12 28	21 01	20 28	6 10	46 60	166 38	84 99
Grey, S	175	67	1,780	90	75 33	47 50	73 00	83 63	279 46	9 50	20 00	4 29	10 65	14 55	3 93	77 68	140 60	138 86
Haldimand	495	179	4,202	338	93 26	132 75	100 00	130 74	456 75	25 23	90 10	14 63	14 50	14 55	23 07	159 91	341 99	114 76
Haliburton	69	35	376	29	54 57	14 75	29 00	173 06	271 38	13 25	.....	5 28	2 25	1 00	12 51	140 14	174 43	96 95
Halton	602	110	3,947	174	192 32	126 50	111 00	101 00	530 82	16 63	73 20	14 19	21 10	13 05	5 05	235 25	378 47	152 35
Hastings, E	226	60	1,555	71	96 58	58 00	50 00	95 81	300 39	22 10	29 00	7 03	14 32	14 39	.....	119 97	206 81	93 58
Hastings, N	191	100	1,682	134	77 99	48 75	68 00	92 65	287 39	5 86	32 20	8 49	8 50	8 05	25 00	87 18	175 28	112 11

Hastings, W	71	34	659	29	13	63	17	25	42	00	5	72	93	2	73	15	00	1	38	5	00	6	60	.....	6	00	36	71	36	22
Huron, E	281	84	1,420	104	36	64	52	50	75	00	39	58	203	72	46	90	26	50	12	94	17	50	11	00	13	00	32	23	160	07	43	65
Huron, S	31	.....	.....	.....	3	44	7	75	13	00	31	46	55	65	.....		9	00	1	95	2	00	.....		4	10	30	08	47	13	8	52
Huron, W	279	91	2,129	117	58	99	55	00	58	00	113	39	285	38	22	70	32	05	11	82	9	40	8	15	.....		84	77	168	89	116	49
Kent, E	269	89	1,980	156	78	39	52	50	68	00	39	10	237	99	13	94	36	75	8	62	16	25	17	65	2	10	50	29	145	60	92	39
Kent, W	217	72	1,316	110	84	96	46	25	31	00	70	10	232	31	31	00	18	00	5	38	14	09	14	47	18	00	52	40	153	34	78	97
Lambton, E	281	120	2,770	186	76	65	86	25	138	00	106	51	407	41	38	15	57	50	8	74	26	68	32	35	1	20	87	85	252	47	154	94
Lambton, W	247	116	2,589	161	63	83	58	00	95	00	49	92	266	75	28	42	20	95	13	81	15	80	13	60	5	25	62	80	160	63	106	12
Lanark, N	98	30	679	32	32	92	32	75	22	00	11	40	99	07	15	75	.....		1	37	3	25	2	05	.....		18	42	40	84	58	23
Lanark, S	204	33	1,001	59	41	75	48	00	25	00	4	47	119	22	16	40	.....		4	30	9	00	6	45	13	47	45	30	94	92	24	30
Leeds	186	49	1,632	87	20	59	60	75	34	00	153	83	269	17	7	00	3	75	7	06	11	25	11	15	5	20	125	85	171	26	97	91
Leeds North and Grenville	38	16	311	15	9	50	10	00	.....		1	20	20	70	9	00	.....		1	10	1	14	.....		.....		1	20	12	44	8	26
Lennox	95	24	430	25	7	54	25	25	47	00	34	05	113	84	.....		18	00	3	06	2	75	.....		37	70	6	60	68	11	45	73
Lincoln	187	42	1,054	54	78	37	48	25	34	00	137	34	297	96	15	92	34	00	8	51	15	24	6	80	.....		114	35	194	82	103	14
Middlesex, E	211	55	1,697	91	75	67	46	00	44	00	50	59	216	26	18	10	15	65	5	85	7	88	6	50	.....		45	13	99	11	117	15
Middlesex, N	381	104	3,268	213	206	33	95	75	74	00	534	48	910	56	27	50	57	70	14	66	14	36	11	25	2	50	493	12	621	09	289	47
Middlesex, W	168	43	1,494	81	18	97	40	00	49	00	38	19	146	16	14	90	15	00	3	85	5	25	4	55	18	40	35	54	97	49	48	67
Monck	178	66	1,726	68	44	92	52	50	56	00	367	43	520	85	1	00	31	00	7	98	8	98	13	00		90	439	70	502	56	18	29
Muskoka, C	54	25	358	42	53	26	14	00	28	00	14	90	110	16	3	75	10	00	4	86	3	84	1	75	7	50	39	70	71	40	38	76
Muskoka, N	106	73	933	84	36	16	26	50	40	00	78	25	180	91	2	00	6	50	7	45	3	00	1	50	2	75	61	76	84	96	95	95
Muskoka, S	127	76	1,095	58	188	40	30	75	52	00	58	36	329	51	3	35	15	00	5	89	7	03	16	00	7	40	112	38	167	05	162	46
Norfolk, N	175	48	1,097	77	116	00	36	00	50	00	11	72	213	72	1	82	21	80	5	00	2	50	8	55	1	00	37	25	77	92	135	80
Northumberland, E	333	90	3,672	162	106	36	80	50	98	00	249	73	534	59	17	62	61	25	8	21	20	60	6	00	53	56	129	81	297	05	237	54
Northumberland, W	151	59	1,649	73	108	72	37	50	65	00	109	60	320	82	14	45	41	99	7	32	8	50	17	71	34	12	82	00	206	09	114	73
Ontario, N	148	61	1,225	84	7	00	36	25	34	00	18	58	95	83	5	50	10	00	4	59	11	85	14	80	.....		20	55	67	29	28	54
Ontario, S	277	102	2,588	114	111	36	81	75	83	00	19	36	295	47	12	20	38	60	12	98	13	75	15	25	5	50	48	94	147	22	148	25
Oxford, N	312	107	2,932	183	203	16	72	00	95	00	179	06	549	22	30	20	31	97	9	53	24	20	19	00	4	70	174	47	294	07	255	15
Oxford, S	291	89	2,177	126	128	43	57	25	99	00	345	10	629	78	15	85	53	70	11	61	13	31	23	45	4	75	370	50	493	17	136	61
Peel	601	122	3,176	169	148	92	140	75	94	00	613	28	996	95	22	50	73	05	22	37	36	91	42	70	.....		584	63	782	16	214	79
Perth, N	139	37	1,108	42	30	51	38	25	44	00	40	90	153	66	15	13	17	05	7	72	9	50	7	70		45	59	18	116	73	36	93
Perth, S	295	78	2,442	77	81	36	84	25	52	00	97	08	314	69	20	82	31	85	11	31	25	10	21	45	.....		72	28	182	81	131	88
Peterboro', E	129	17	1,514	36	52	86	34	50	32	00	87	61	206	97	19	19	.....		5	00	8	95	2	25	1	90	50	90	88	19	118	78
Peterboro', N	41	19	90	19	44	03	10	25	6	00	5	75	66	03	.....		.....		1	10		75	.....		15	55	1	50	18	90	47	13
Peterboro', W	.....	9	93	4	1	90	7	75	15	00	4	40	29	05	10	00	10	00	1	53	.....		.....		2	50	4	00	28	03	1	02
Prescott	12	5	151	6	.....		3	50	10	00	.....		13	50	.....		.....		.....			50	3	00	.....		.....		3	50	10	00
Prince Edward	290	104	2,196	177	112	62	76	50	64	00	152	04	405	16	33	25	20	94	10	06	15	20	20	60	3	55	135	74	239	34	165	82
Renfrew, N	146	63	625	112	46	67	30	75	62	00	69	45	208	87	1	80	24	00	7	54	8	10	3	50	15	68	55	37	115	99	92	88
Simcoe, C	320	115	2,090	174	77	59	58	50	102	00	93	42	331	51	11	00	23	10	8	27	8	14	28	25	8	75	92	96	180	47	151	04
Simcoe, E	119	56	1,108	72	16	52	17	50	40	00	44	18	118	20	5	00	16	05	6	25	8	60	4	00	1	60	18	00	59	50	58	70
Simcoe, S	154	52	906	71	51	54	33	00	40	00	55	55	180	09	3	00	10	00	4	77	16	73	9	15	4	35	73	85	121	85	58	24
Simcoe, W	231	85	1,788	125	101	21	53	50	88	00	166	02	408	73	23	20	22	50	7	47	13	45	38	20	54	31	131	26	290	39	118	34
Stormont	24	11	131	13	.....		5	00	10	00	128	62	144	12	10	00	2	00	3	00	.....		.....		.....		112	40	127	40	16	72
Union	86	31	566	43	60	35	25	75	50	50	38	57	175	17	5	65	26	00	2	20	5	25	6	65	21	59	17	85	85	19	89	98
Victoria, E	241	89	2,380	145	48	37	55	50	67	00	39	72	210	59	27	80	26	65	12	39	4	55	6	50	1	90	61	85	141	64	68	95
Victoria, W	406	130	3,245	229	104	02	108	75	86	00	157	52	456	29	26	45	61	00	32	63	22	30	17	90	1	03	210	49	371	80	84	49

Institute District.	Membership.	Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.					Expenditure.							
					Cash on hand per last Report.	Members' fees.	Grants.	Miscellaneous.	Total receipts.	Expense for meetings.	Officers' salaries and expenses.	Postage and stationery.	Printing and advertising.	Lecturers' expenses and wages.	Books and periodicals.	Miscellaneous.	Total expenditure.	Balance on hand.
					$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Waterloo, N	208	66	1,995	93	107 52	60 25	68 00	33 63	269 40	17 55	31 60	10 96	5 50	125 82	.....	68 33	159 76	109 64
Waterloo, S	359	87	3,036	117	132 58	96 25	68 00	433 71	730 54	41 46	77 11	13 79	22 41	44 32	2 30	247 79	449 18	281 36
Welland	353	101	2,045	127	170 18	83 00	94 00	198 21	545 39	6 25	49 70	16 47	16 65	123 25	32 95	125 63	270 90	274 49
Wellington, C	291	96	2,048	128	124 55	60 25	89 00	102 47	376 27	14 50	54 95	11 05	15 50	36 95	50	117 79	251 24	125 03
Wellington, E	205	84	1,502	117	82 24	55 50	83 00	65 08	285 82	5 50	23 20	12 71	15 50	33 65	14 95	96 31	201 82	84 00
Wellington, S	191	67	1,390	79	89 71	41 75	71 00	64 89	267 35	4 50	28 75	7 17	4 75	8 00	.....	112 00	165 17	102 18
Wellington, W	108	49	811	55	73 70	27 25	59 00	155 80	315 75	36 50	19 75	4 21	21 40	20 31	.....	43 86	146 03	169 72
Wentworth, N	335	104	2,982	177	214 32	85 50	92 00	169 63	561 45	44 50	35 00	13 53	25 42	12 00	.....	198 70	329 15	232 30
Wentworth, S	303	99	2,437	162	93 66	80 00	114 00	55 50	343 16	17 33	33 63	31 24	22 04	40 25	4 75	44 38	193 62	149 54
York, E	403	97	3,740	145	154 15	94 75	128 00	175 62	552 52	23 28	47 85	17 79	26 90	18 48	3 25	180 78	318 33	234 19
York, N	212	101	2,601	142	101 45	58 75	138 00	83 92	382 12	16 00	25 59	10 08	14 80	20 63	3 82	84 86	175 78	206 34
York, W	299	98	2,720	123	54 06	88 75	99 00	54 75	296 56	68 35	20 25	20 67	33 15	20 95	5 95	61 28	230 60	65 96
Algoma, C	96	48	608	42	145 47	26 25	34 00	185 46	391 18	2 00	41 00	7 07	10 30	2 50	45 32	111 28	219 47	171 71
Algoma, N.S	101	38	796	58	38 63	21 25	28 00	87 69	175 57	2 70	21 00	6 68	4 25	75	7 59	79 59	122 56	53 01
Kenora	118	49	616	66	70 13	24 25	31 00	23 95	149 33	11 00	17 45	6 47	8 75	11 25	17 88	34 01	106 81	42 52
Manitoulin, E	118	80	2,013	143	162 22	31 00	52 00	305 11	550 33	33 00	19 50	7 75	65 50	.....	9 00	286 13	420 88	129 45
Manitoulin, W	117	70	1,012	133	91 36	29 50	43 00	183 90	347 76	3 60	23 25	7 80	.....	.....	37 78	135 95	208 38	139 38
Nipissing	61	33	682	44	.....	16 25	9 00	21 35	46 60	.....	.....	1 65	.....	.....	3 92	23 98	29 55	17 05
Parry Sound, E	248	103	1,615	97	182 80	58 75	33 00	181 32	455 87	5 00	5 00	9 52	8 35	2 50	47 97	152 87	231 21	224 66
Rainy River	136	66	899	51	36 00	34 75	52 00	2 50	125 25	5 00	25 05	7 23	8 00	2 00	18 12	14 40	79 80	45 45
St. Joseph Is	43	21	209	12	16 75	12 00	22 00	88 16	138 91	90	10 00	2 85	4 40	.....	17 95	20 15	56 25	82 66
Temiscamingue	123	88	1,643	74	189 99	42 00	58 00	39 85	329 84	80	21 75	8 82	9 88	50	5 10	65 00	111 85	217 99
Thunder Bay	219	93	2,052	121	51 57	58 75	58 00	75 92	244 24	3 00	.....	10 91	20 75	4 00	27 85	92 75	159 26	84 98
Total	19,091	6,433	152,762	9,180	$ 7,500	$ 4,731	$ 5,660	$ 10,152	$ 28,043	$ 1,441	$ 2,348	$ 826	$ 1,227	$ 1,179	$ 1,013	$ 9,510	$ 17,547	$ 10,496

NINTH ANNUAL CONVENTION

OF THE

ONTARIO WOMEN'S INSTITUTES

The ninth annual Ontario Women's Institute Convention was held in Convocation Hall, University of Toronto, November 16th and 17th, 1910. The first session on Wednesday, November 16th, at 2 p.m., was opened by those in attendance rising and singing the National Anthem, after which the Rev. Canon Cody led in prayer. Mrs. (Dr.) Wilson, Parkhill, presided.

ADDRESS OF WELCOME.

MRS. A. M. HUESTIS, TORONTO.

It gives me much pleasure to extend a hearty welcome to you on this the occasion of your ninth annual meeting. I welcome you in the name of the Federated Women's Associations in the City of Toronto.

It is interesting to know that your Institutes have 600 branches with a membership of over 16,000, and a baby branch here in our city. The Department of Agriculture is to be congratulated on the splendid success, if not phenomenal growth, of this movement.

In glancing over your programmes of study and large list of books on Foods and Cooking, Sanitation and Hygiene; Children, and the Study of Childhood, with Home Economics and Physical Training, Nature Study, Gardening, Laundry Work, Dressmaking, Bee Culture, Art and Literature, Life and Love, one realizes the wide and comprehensive work covered by the organization. As I understand it, you are banded together for the home and its uplift. All that tends towards the proper methods of accomplishing the unlimited variety of work incidental in conducting a well-ordered home comes to you home mothers for a solution. You have realized in talking over these matters relative to home management, that you have been strengthened by contact with your sister-workers, and also have craved a viewpoint based on practical science, as shown by your choice of books.

Scientific knowledge of home subjects invariably lifts the commonplace round of duties out of the routine of drudgery and into the ideal. When mother knows why she cares for baby and baby's food in the most approved method, she no longer rebels over the time required to sterilize milk receptacles, or to persuade father that the barn needs whitewashing, cement flooring and window space to meet health requirements and make a modern cow barn. She even rejoices that she is permitted to look into the source of the water supplied to the cattle, and the water used to boil the vessels. She sees that her's is not one of the 2,000 wells examined by the Provincial Health Department and 60 per cent. found contaminated. She urges that her well be placed far from any source of infection, and on the highest available piece of land, to ensure proper drainage. She is glad that it is within her province to know that her well has a cover so tight that no piece of mud or barn yard soil, or foreign matter of any kind, including the unwary toad, can creep in to make impure the water that baby will have to drink. And when disease, such as typhoid, strikes its deadly poison in her neighborhood, it will be this modern Institute woman who will lead in the reform to prevent such a dire calamity happening again. That it even occurred once is a disgrace to any com-

munity, but that it would ever repeat itself will be made well-nigh impossible by sanitary measures.

This Institute woman will also carry with her the "Gospel of Sunshine." She will remember that water, air and sunshine, the three greatest hygienic agents, are free, and within the reach of all. So she will open wide the doors and windows of her home and the windows of her soul and let the beautiful purifying agents of our Divine Maker into her very existence.

I notice on your programme that you are considering the fly peril. During my recent trip to the West, I saw nothing which impressed me as a geater menace to life than these same flies. In one Western city of 35,000 population, during last August, 65 bottle-fed babies died, and milk was blamed. Bad, poisonous milk. But let me add that the swarms of flies did not tend to sweeten this same milk and make it fit for food. If we could do as the Chicago Health Department did during the weeks of early summer, supply the nickel shows with these films, such as you are to see to-night, which were witnessed in the congested quarters of Chicago by 18,625 persons, who can estimate the good that would be accomplished? We might aim to cover not only our crowded cities, but the smaller towns and villages and assist in doing a grand work and a much needed one here in Ontario and in the entire West (and I am not so sure that the East is so free). No, dear Institute woman, do not sit down while even a single fly imperils the life of your family by its existence in your home. Trace the spread of typhoid to the fly and exterminate him by cleanliness everywhere. This will mean municipal and rural housekeeping, but, if our civic and district fathers do not know how to housekeep and we do, it is ours to point the way to the needed cleaning and to help to secure a Department of Public Health to control by preventive means all these questions of conservation of life.

It will be within your province, as noble-minded women, to work to secure breathing spaces in our towns and cities where our children can, under supervision, enjoy "God's out-of-doors." Also to take a keen interest, not a critical one, in our public school system. Guard the health of your child, for there is no school in existence that can give your child a substitute for health. Walk into the school, in which is spent the best part of the day. See if the ventilation is what it should be. Look into the sanitary arrangements. Take a glance to see if the blackboard is so shiny as to cause eye-strain, and observe how many children within range of your child have coughs and colds. Investigate the drinking water and drinking cups. If you are not satisfied with prevailing conditions, go out as an earnest woman and urge upon the authorities the righting of anything that is objectionable.

There is no question of public interest too large but what we women citizens can help to further it and yet remain within our province as women, and best of all, mothers. This band of 16,000 women will remember that "Unity is strength," and, as Ruskin says, "Woman has a personal work and duty relating to her own home and a public work and duty which is also the expansion of that."

We the members of the Toronto Branch of West York District Women's Institute are willing to aid any of the other Institutes wishing our help and we also want you to help us. We city women are not always at ease in the country, but there is sure to come into this Ontario Institute work many questions requiring mutual help, and we are here to serve.

May I, on behalf of our societies, wish this annual meeting "Showers of blessing," inspiration and help, and assure you that the welcome comes right from my heart to yours.

REPLY TO ADDRESS OF WELCOME.

Mrs. William Bacon, Orillia.

On behalf of the Women's Institute of Ontario, I may say that these kind and gracious words of welcome from one experienced in the work of Women's organizations and fraternities have warmed us with a responsive glow. They have made us feel that we co-operate with all who would place humanity on a higher plane and that in all essentials we are one with them. We feel encouraged to know that while we are busy with the work of our homes, other women are faithfully performing duties which are out of our reach and are quite as necessary for the upbuilding of a wise, good and happy people, and a great and beautiful Canada.

The Institutes warmly appreciate the privilege of meeting in the University Convocation Hall. Most of us have pleasant associations with Toronto University. Some of us were here two years ago during the Quinquennial Congress and carried away a share of the inspiration that came from the great gathering. Representing as our organization so largely does the rural population of Ontario, we have contributed from our homes the bulk of the University students. Moreover, we are in league with its aim and work. The work of a University is to produce good citizens, trained for their business in life; fundamentally, the work of the home is the same. Our motto, "For Home and Country," means this first of all. If we are loyal to a motto so patriotic, so wide in scope that it embraces almost all we hold sacred, we shall help to bring into existence for Canada and Canadians a richer, fuller, broader life. Could we send to this University sons and daughters of integrity, of perfect self-control and sound body, I feel sure the faculty would be grateful to us. And it is quite within our province to equip the young manhood and young womanhood of future Canada physically, mentally and spiritually. So let us be pre-eminently homemakers if we would lay the foundation of national greatness.

We should be very thankful for the growth of our organization, which under its efficient superintendents, Dr. Creelman and Mr. Putnam, has been phenomenal. When, fifteen years ago, a few women met in a sitting-room to talk over household matters they did not dream that their little gathering was the nucleus of an institution comprising many thousands. Neither did they expect that the watchword which was soon after adopted would be interpreted in its broadest sense. Yet these things have come to pass. We have gone from the simple principles of cooking and hygiene to the deepest priniciples of character-building. We have done much for many causes, private and public, and have cultivated a broader outlook on the work in general. Whether we are rich or poor, we may live in an atmosphere of "sweetness and light" as easily as in one of unrest and gloom. It is not what we have, but what we are that counts. In these days we hear much talk of altruism and ethics, but generally these words are used in such a far-off connection that we feel no interest in them. And yet the spirit of the word altruism is regard for others. Might we not well take it for the spirit of our home life? And surely we do not need to go beyond our own homes to give moral training where it will be most effective. Its influence may reach far out beyond our knowledge. If we can do the outside work, by all means let us do so, but, if we cannot, do not let us feel that our life is circumscribed.

There is one vital point which we must not forget: what we would have our families be we ourselves must be. We need not try to teach them truth, unless we hold, fervently and high, a love of truth.

We must feel it a crime to be moody, discontented or envious, since this reacts on those about us. All the great leaders of the world, whether generals, foremen or housemothers, have had the faculty of inspiring their followers. The very air about them seemed permeated with cheerfulness and hardihood, so that their retinue found unpleasant tasks agreeable, and the seemingly unattainable, easy of access. When the cheerful temperament is not natural to us it can be cultivated and will be found an important factor in the making of a successful home.

With the growth of the Women's Intsitute has come the popularizing of technical knowledge of housekeeping. We are learning that cooking, sewing and all the simple works of the home are not haphazard occupations, but arts to be delighted in, and by which we can contribute our share to the world's happiness and well being. By all means let us send our daughters to the Macdonald Institute, the Lillian Massey School, the Technical School or some other establishment where they will be taught the underlying principles of household arts. As Dr. Creelman said last year of the farmers, we, too, "Are just on the edge of things." Simplicity in methods and furnishings is growing in favor—science is coming to our aid by lightening labor—and we are realizing that home building is not a mere matter of dollars and cents. Cleanliness, nutritive food, books with all their world of knowledge, and above all, regard for others, these are in reach of rich and poor alike.

Kate Douglas Wiggin, in her novel, "Mother Carey's Chickens," refers to that old metaphor of the family circle in this way: "There are none too many of them. There are parallel lines, never meeting; there are squares, triangles, rhomboids, but few circles." Is not this a pregnant thought, especially when we remember that the ripple of circles ever-widening goes out to eternity?

We women of Ontario need to pause and think gravely of the conditions in the vast territory to the west of us whither our young people are drifting. This territory is being largely settled by peoples from lands where the home is not so honored as it is with us; from lands whose traditions place the wife and mother on a level with the beast of burden. Our short experience with them has shown them ready to adopt better ways of living. Our opportunity to spread the gospel of home-making is before the influx becomes so great that we shall be overcome by the magnitude of the task.

Truly, "We are just on the edge of things," and the vast future before us as Canadians just coming into our own is filled with great vistas of progress.

May it be true of us all what was said by a German writer of a woman: "Men at her side grew nobler, girls purer, and all through the town the children were happier that pulled at her gown."

ADDRESS.

REV. CANON CODY, TORONTO.

It is my privilege to say this afternoon a few words upon the general subject which has brought us together, set forth in your motto "For Home and Country." We all realize that we shall not discharge our duties to home and country unless we add a third duty, implied but not expressed, "For God." "For Home, Country and God."

From some utterances reported in our newspapers of late, one might imagine that the rural parts of the Province of Ontario were degenerating; that the rural

parts were going to destruction. A view of the audience in this hall should give the quietus to any such delusion. The rural parts of the Province of Ontario are the saving salt of the Province of Ontario. The whole Dominion of Canada is an agricultural state. It is in part becoming industrial through our great water powers. We are entering upon the field of manufacturing better equipped than perhaps any part of the Empire, and yet, in spite of all industrial development, Canada remains an agricultural country, and, therefore, the character of our agricultural life is going to determine very largely the character of our national life. You represent pre-eminently the country parts of the Province. It has always been the case, that, with the growth of cities, the burden for purifying life has rested still more heavily upon the country parts. Mrs. Bacon has said that it is from the country parts of the Province that the largest proportion of our University students come. As the homes in the country parts are, so will be the general character of our University life and in the long run the general character of our national life.

It has been remarked about France that Paris is like a great sponge that sucks the life out of all the Provinces, and that when there is no more life in the Provinces, the capital will die and the country will die. To a large degree, that will remain true of any country where there are huge centres of population. The life of the country will be maintained very largely by the sobriety and simplicity of the homes in the country.

The great drawback of country life is the monotony to which we are exposed, and these Women's Institutes are a most providential device for breaking that monotony, giving us the opportunity of meeting one with another and giving us the stimulus when mind clashes with mind. More than that, these Women's Institutes are engaged in applying science and theory to the ordinary practices of the home and farm. Everything becomes increasingly interesting when we know the reason for it. It is possible to do things by a routine that does tend to a deadening monotony, but, when we know the reasons for things, then even commonplace acts take on a new complexion. When we know the reason why we should ventilate our houses and prepare food in proper ways; when we know the reason why we should wage war on flies; when we know the reason why we should choose the best kind of seed, and a hundred other things that relate to the country, all these things become increasingly interesting and the monotony of life will be broken. As Robert Louis Stevenson has said: "The world is so full of a number of things, I am sure we should be as happy as kings." Life in the country is intensely interesting, if we only have eyes to see and the minds to perceive the reasons for things. The Women's Institutes are breaking the monotony of life by giving the opportunity for mutual intercourse and for applying science to the daily duties of the home and farm. "For Home and for Country." It is a glorious motto.

Not long ago I remember reading, when I was in London, the address presented by the Corporation of York to King George the Fifth after his succession, and King George replied in a memorable address, the first sentence of which is as follows: "The foundations of national glory are set in the homes of the people. They will only remain unshaken while the family life of our race and nation is strong, simple and pure." That is one of the great commonplaces of life; but no one can overestimate the influence of the home upon the religious, social, and political interests of the nation.

I was glad to hear Mrs. Bacon's words, that, if any woman has to choose between duties, she will without hesitation choose the duty to her home as the

supreme duty, and, if the only sphere to her activity must be in her home, she will not feel that life is circumscribed.

There was an outbreak some time ago when that versatile Emperor of Germany gave his views of women's sphere. He summed them up this way—church, kitchen and children. It was supposed to be a reflection upon the powers and sympathies of women. Perhaps in some senses of the term it might have been. But, women, is there not a broad and magnificent field offered in the home and in the cultivation of religion? I do not think that life will, after all, be so circumscribed, if it has those great spheres of activity. Let us realize the high calling and dignity of the homemaker. In our homes to-day there are two tendencies, and those tendencies are going to make for the enervation of the future generation. Let us in the homes fight them from the outset. The first is the tendency to regard pleasure as the supreme aim in life, and the second is the avoidance of personal physical discomfort. Pleasure is not the supreme thing. God sent His Son into the world, not to make life easy, but to make men and women noble, and in the course of life, through the endurance of hardness and the overcoming of difficulties, character is brought ont. Our children are suffering in homes and schools from the elimination of difficulties. Everything is made easy. Every pill that has to be taken is given with a sugar coating, and that will indelibly make life soft and flabby.

May I venture with all humility to add one thing further on the subject of home. Mrs. Huestis anticipated me in her use of the word "sunshine" in the figurative, as well as in the literal, sense. A great essayist, in commenting on the character of John Milton, said, "The art of creating happiness, the most beautiful and most difficult of the fine arts, Milton had not studied." He did not know what has been called the gentle art of making happy. And that is an art that must be exercised, must be studied by the house mother, if there is going to be the figurative sunshine that will bring moral health in the home. In practising that art, let us remember we are fellow-workers with God. Let us remember that it is in the common opportunities of daily life that we shall best practice the gentle art of making happy. The story of Michael Angelo and perfection will come to your mind. After days of toil the observer said, "You make no progress with your work," but Michael Angelo said, "I have smoothed a muscle and perfected a feature." "Those are mere trifles." "Yes, but trifles make perfection, and perfection is no trifle." It is the little opportunities that give us our chance to practice the gentle art of making happiness. It will be the little sins that, more than anything else, will mar the happiness of home.

One further word, and I have done, on the second great heading of your motto, "For Home and Country." The greatest teacher of patriotism, of true citizenship will be the house mother. The school can do much. The newspapers can do more. From earliest years let us seek to teach the children the elements of a Christian patriotism. There is the base patriotism that consists only in braggadocio. It was of that patriotism that Dr. Samuel Johnston said, "Patriotism is the last refuge of the scoundrel." He meant that there were men who apologized for the poverty of their lives by boasting of their country. But there is a greater patriotism, a true patriotism of country. The Christian loves his or her own country, without feeling it necessary to hate any other country. That is the first mark of patriotism.

The second is this, that we are most sensitive to the moral ills, to the degradation, and crimes that are lowering the moral standards of our own country.

Women will teach their children the elements of Christian patriotism on those lines—love your own land, without hatred to another, and with sensitiveness of all the moral ills that crust the land in which we live, that we shall be roused to fight against these from earliest days.

May I summarize the principles upon which the training of boys and girls in Christian citizenship will always proceed. First, we shall teach the sons of a mission to humanity, we shall teach that God has given us a splendid country to be held in trust from Him for the good of the whole world. Second, we shall teach that the testimony of history is this: that nations, whether ancient or modern, have always expanded and flourished in such degree as they have obeyed the laws of truth and righteousness, and have declined and decayed in such proportion as they have disobeyed the laws of truth and righteousness. Third, that the great British Empire, of which we proudly form a part, is based upon ideals of justice, equality, freedom and progress in matters secular and sacred, and that, if it is to endure, it must be true to these ideals. Fourth, that the fear of God made Britain great, and no nation was ever made great by any other fear. Lastly, the State, which is often treated as though it were a distinct entity, is made up of the individuals who live within the bounds of the land, and a State can never be great and true so long as the spirit of its citizens is mean and ignoble. The truest foundation for national growth will be the moral, spiritual foundation that is laid in the fear of God, and that brings us from home and country up to God, and you, the representatives of the Ontario Women's Institutes, will feel, I am sure, that, as you bring up your children God has given you in the nurture and fear of the Lord, you will be rearing good citizens who can make a great State.

REPORT OF THE SUPERINTENDENT.

G. A. Putnam, Toronto.

When I was in Washington a few days since, I found that they are looking to Canada, to the Women's Institutes, as a model; and we, as the Women's Institute members, are setting an example to the world in this noble work. We are setting an example, not in gaudy display, but in home-making, in home-keeping, a higher community life; and, if we are to reach the greater heights, if we are to accomplish the most, we must have high ideals before us and do our part to see that the nation, so far as possible, is lifted above all that makes for decay.

Although you have had a right royal welcome, I wish to add to it by expressing my great satisfaction in meeting with such a large number of representatives from the Women's Institutes of Ontario, an organization which is not only extending to new territories from year to year, but is growing in numbers, popularity, and effectiveness of work in those sections where the work was first undertaken.

The records and statements received by the Department from day to day cannot but impress and enthuse one with the magnificence and possibilities of the work which you are doing, but, in coming face to face with the women who have been behind the guns and gained the victories already to the credit of the Institute, one is doubly impressed with the importance of the task before us.

Only the fearless in good work and public spirited would attempt to deal with many of the questions which are now receiving consideration by the Institutes. It is a great responsibility for the officers to guide the deliberations of their respective local societies along lines which mean so much to the future well-being of the citizens of this young and ambitious country which is being forced to assume such grave

responsibilities in nation building at this time. The assimilation of the large numbers who are coming to us from many lands each year, and making of them citizens who will maintain the high ideals which have characterized the Canadians in the past, is a responsibility which the loyal subject will be glad to accept. The Institute must, if it lives up to its opportunities, play a large part in this.

The development of the work during the time I have been connected with it, nearly seven years now, has been a very interesting study.

In the early days of the Institutes, the reply to inquiries as to how the work was progressing in any particular society was nearly always in some such manner as this, "We have splendid times, I got a most excellent recipe at the last meeting, and many of the ladies were delighted to get a copy of my method of canning raspberries," or "We had a very nice social time, Mrs. Blank provided a splendid luncheon—cakes, sandwiches, coffee, and fruit." In these times the replies are quite different and indicate that the Institutes are not self-centred, but are reaching out to help others at the same time that they are receiving benefit. Local libraries are being established in increasing numbers and Travelling Libraries are being asked for by many of the Institutes. The beautifying of home surroundings and town or village is receiving a just amount of consideration, street lights are being installed, permanent quarters provided for the Institute meetings and libraries. The members of the Institute are not only doing work themselves, but are successful in enlisting others in such objects as the beautifying of country cemeteries and church yards, and the improvement of rural schools. One Institute replies that they could not send a delegate to the Convention, but would appropriate the funds necessary for that, in securing a teacher to instruct the school children in sewing. Several societies have furnished individual drinking cups for the school children. Committees have been successful in many instances in inducing the members to make better provision for sanitation about the school premises. There is a decided tendency to make the local school the social centre for the community, and we heartily commend this line of work to the Women's Institutes and Farmers' Clubs. Demonstrations and exhibitions of articles made in the home by the members are more and more appreciated and include cooking, fruits put up in various ways, plain sewing, mending, Christmas presents, etc., and those who exhibit, in many cases, explain methods of work. We have heard in past years of a special day for the children and meetings devoted to special purposes, but it was not until this year that one of the branches instituted "grandmothers' day," when all the grandmothers of the district were asked to attend and give the programme. It is gratifying to note the mutual appreciation between townspeople and residents of the country.

The great majority of Institutes now make definite plans for meetings months in advance and get out printed programmes. This is a decided step in advance and gives a publicity and definiteness of purpose to the work which cannot be secured otherwise.

The Institutes are making decided progress in systematizing the work in the various districts. District Presidents realize that their responsibility does not end with the conclusion of the annual meeting; but, as one of the chief executive officers, she is expected to render assistance where there is a call or to branches which show evidence of lack of interest or progressiveness. The possibility for organizing in new sections of the riding should be considered from time to time and attempts made on the part of the Institute officers to organize, even without assistance from the Department. An interchange of programmes on the part of adjoining Institutes is quite general and there is an increasing interest in district meetings and

county conventions. The relationship which the various branches bear to the work of the district is well understood and the annual statements from both branch and district officers, as well as the monthly reports of meetings, are this year a great credit to the officers, something which could not truthfully be said two or three years ago.

With our six hundred branches and a membership of 16,000, which promises to materially increase during the current year, we have a means through which information upon many topics of vital interest to the individual, the family, the community and the nation, may be most effectively disseminated among the influential women of the Province. We have indicated upon our programme that the wisdom of outlining definite courses of study for the Institutes will be considered. So much excellent work has been done through the methods now followed, that one hesitates to introduce anything which might leave the impression that the Institute is a school demanding study and systematic work on the part of the members, and thus tend to discourage those who are most in need of the social and housekeeping features of the Institute from taking any active part, or even from becoming members. The Institute cannot be expected to in any way take the place of the school or the college which undertakes to teach Home Economics. We are most anxious to render acceptable service to the women who have not had the advantage of a broad education and have not the time, even though they had the inclination, to follow any definite line of study. There is no good reason, however, so far as I can see, why many of our societies should not be given an opportunity to take up a somewhat systematic consideration of many of the problems bearing upon family and community life. We trust that this feature of work will receive your careful consideration and thought.

We hope to see some system introduced which will provide for systematic instruction covering three or four months' time among some of our Institutes in one or more sections of the Province during the coming year. This work, as well as the likelihood of securing the co-operation of the Institute in an effort to introduce Domestic Science in the rural public schools, has been discussed with Miss Watson, of Macdonald Institute, and she will outline some of the possibilities in her address to-morow.

The successful practical woman who has accepted responsibility and made good, is able, if she is only willing, to give much valuable information to her younger and less experienced neighbor in a manner which is impossible for the average domestic science graduate. By a judicious proportioning of addresses and papers by the scientifically trained and the practical women who have not had that advantage, the best results will be obtained. It must be remembered that the wide-awake woman who has had domestic science training has much information of great value to the housekeeper which is not at the command of those without such training.

Women prominent in philanthropic and educational work are being attracted by the excellent results attending the efforts of Women's Institutes and are coming to appreciate the great possibilities for disseminating valuable information through such a wide-spread organization which represents the public spirited, capable women of Ontario. Only last week a number of representative women in this chief city of the Province, organized a Women's Institute.

I cannot close without expressing my appreciation, as Superintendent, and I know I voice your sentiments as delegates, of the valuable assistance rendered by Miss Watson, of Macdonald Institute, Guelph, in furnishing up-to-date information upon lines of special importance and interest to our members for use in preparing

papers and addresses at their monthly meetings. She is here to tell us something as to what she has done and what she is prepared to do.

We most heartily welcome from across the line, one who is deeply interested in all matters which affect home and home life, and, in speaking on the subject of "Children," Mrs. Hollowell will give facts and suggestions which will prove of great value to our Institutes in the work of the current year.

We have before us a programme which should prove of great interest and value to our delegates and city friends, and we trust that all delegates will freely take part in the discussions which will, we trust, form an important feature of the proceedings. The Convention is yours and we wish you to make the very best of it.

THE CHAIRMAN: There is just one phase upon which I would like to speak. It seems to me that one of the most gratifying results of the Institute's work is the growth of the fraternal spirit. The spirit that men call brotherhood. To succeed, the Institutes have to be democratic in spirit, and more and more the women of the Institutes are being recognized for their sterling qualities of heart and mind. The Institutes have set women all over Ontario doing. One-half the people of the world do not know how the other half live, but the Institute worker finds out how the Institute workers live and is delighted at the discoveries she sometimes makes. The Institute can be a boon to a country community, if the proper leaders are found. Then, having found the right leaders, the work begins. It begins with the kitchen, the daily task, the common lot of all, and slowly it opens out, pushing back the horizon which binds. If their talk is small and commonplace, never rising beyond the commonplace, never rising beyond the daily grind or the things which mean money to them, we cannot blame them, for those things are their world. The Institutes direct their attention to ventilation, to sanitation and to labor-saving devices and gradually it leads them out to take an interest in the school and all the questions pertaining to the women who are out in the world, and gradually the questions pertaining to the welfare of the nation. It takes time to do this. It is hard to convince some women that the time has gone by when she can close her doors and shut her duties to her family within the four walls. The commercial world is full of girls and the hearts of the women at home cannot fail to respond to any call from them for help.

The Institute is for women what the public school is to the nation. All denominations and classes meet together and they are one. Class, social position, wealth, religion are all swept aside, and each one must find her own level and each one must be taken on her own merits. It touches the farm homes all over Ontario, making them, with the town and city homes, the largest body of organized women in Ontario to-day. As every politician knows, the rural population is to be reckoned with, and the women of the rural districts will wield an influence as great as the city women.

We will now have the addresses and discussions by delegates from newly organized Institutes.

ADDRESS.

MRS. (DR.) MCPHAIL, MANILLA.

Mr. Putnam has asked me to tell what a new Institute has done, how interest was first created, the method of organization and the activity following.

Manilla, the place I represent, is a small village with a population of two hundred. It has a splendid outlying country, branching in every direction. The

people are above the ordinary—plain, unassuming, and hospitable. Although such a small place, we are proud to possess a public library, containing nearly four thousand volumes. This library is patronized by old and young alike. The directors aim at supplying the best literature to be found on all scientific subjects, hoping to encourage nothing but the best work or production in whatever a person may be engaged. This good work is financed, apart from the Government and county grants, by the young people. An amateur dramatic club gives two plays during the year and the baseball club holds a tournament and tea. These entertainments are annual events and patronized largely by the countryside.

Apart from church work, there is nothing of a social nature to bring the busy homemakers together. This I have long felt was much needed. An invitation came to me in June to visit an Institute southeast of us. I attended for the first time a Women's Institute and heard addresses by Misses Campbell and Walsh. The subjects taken up by these ladies were of such vital importance to every woman in our fair Dominion that I immediately thought, "Now, this is what Manilla needs." I made inquiries from the Government delegates as to constitution, obligations, etc., required by such an organization and decided there and then that I would leave no stone unturned until we were organized. I remembered an extract from a book I had been reading and will give it to you. It is given in a homely form but means so much. "If you want anything, no matter what it is, you have got to go after it and stay after it till you get it. Just 'wanting' never brought anything, so far as I know, but want." The next morning I called up by 'phone seven or eight ladies, who, I felt confident, would be interested in such work and be willing to use their influence in their different neighborhoods. I found them favorable to the suggestion, so asked them to visit ladies living near them, and find out how many would like to have such a society formed. In the meantime I was to write to Mr. Putnam, the Superintendent, and find out fully how to go about organizing. We arranged a night to meet and report our success. This we did, and after canvassing found a sufficient number ready to take it up, so proceeded to set a date and corresponded with Mr. Putnam again, asking if it would be possible to have a delegate address us. We found Mr. Putnam most kind, he did everything possible to help us have a successful organization.

We arranged to have our gathering in the form of a garden party, the programme to be held in the house. We made a personal canvass of the entire neighborhood, more general than at first, distributing literature and explaining to the best of our ability the object of the Women's Institute. You can imagine my pleasure when I received word from Miss Campbell that she was the delegate appointed to come to Manilla. The day arrived and was all that could be desired, the sun shone brightly and the temperature was perfect for our outdoor gathering. The ladies began to arrive until I began to wonder if our home would be large enough to hold them. In counting, we found we had eighty present. This far surpassed our most sanguine hopes. We felt fully repaid for the time spent, for such a hearty response to the invitation meant that the ladies were ready for the Institute. We invited the district officers and three came. When the delegate asked how many wanted a Women's Institute, forty ladies responded by handing in their names. We had with us Mr. Henry Glendinning, a highly esteemed resident of Manilla, and well-known to Institute workers. In a few words he expressed his pleasure with the organizing of an Institute in our vicinity and promised to help us whenever he could. After the business of organizing was over, the ladies were asked to each take a chair and go to the lawn, where they would be expected to chat with each other, whether acquainted or not. We had the group

photographed, then refreshments were served. One and all pronounced it one of the most pleasant afternoons they had ever spent. We were anxious to have our first gathering a success, for we felt confident that if the ladies spent one pleasant and profitable afternoon, they would want to come again, and their speaking well of it would bring others. After holding four meetings, we can report sixty members and we certainly have every reason to feel encouraged.

I would like to make mention of some points we are emphasizing, and to which we attribute our success thus far. First of all, there must be enthusiasm. Not the spasmodic kind so often met with, but the steady, optimistic enthusiasm not easily discouraged at the little things said, for no good work was ever started without unjust criticism. During the month, show by your interest and kindly acts that you mean what you are talking and discussing. Talk Institute whenever you get a chance. Try to interest others to come to the meetings and see what we are doing. If a member is absent, where possible, call and find out the reason. If there is sickness or trouble in any member's home, have the secretary write a nice, kind letter, expressing the sympathy of the Institute. We place our work on a much more solid basis by these timely acts of kindness than by well-written papers and wordy discussions. In electing officers, be very careful not to have them all in one neighborhood, but to have them represent the different sections of the district and so keep interest moving in all parts at the same time.

The President should not shoulder all the work and responsibility. She should keep an eye over each department and see that the different officers do their work faithfully and efficiently. Have the Vice-President sit with the President at the table, let her help in looking after the meetings, let her do some of the many little things which present themselves and require immediate attention, thus relieving the President of much that only detracts from the regular programme. Then the mere fact of sitting before the audience, although she may not speak a word, helps to wear away the nervousness a Vice-President feels if called upon unexpectedly to preside, and she unconsciously is learning the form the programme and business takes, and it will not seem such a tremendous undertaking when called upon to do it.

Let each President in accepting office see that she is familiar with every point of business. Go to some experienced man or woman, write the instructions down and carefully study them. The haphazard way in which so many meetings are conducted nearly always accounts for them being uninteresting.

Conduct your meetings in a brisk, businesslike manner. We cannot emphasize too strongly promptness in opening and closing our meetings. When any matter is under discussion, avoid the chatter that so often takes place. If a member wishes to express her opinion, have her rise to her feet. Insist on strict attention by the other members, allowing only one person to talk at one time. Do not allow any decision made by the members to enter the minutes unless properly voted upon.

Do not be lax with the finances. Remember that you are handling other people's money, which will have to be accounted for. Have the consent of the members, by the passing of an order, for the payment of the smallest item. Pardon my drawing attention to these items of business so well known to many Institute workers. But, in visiting societies of different kinds, it is wonderful how these small, but very important, details are overlooked, very often causing trouble and confusion.

Make it a rule in the beginning that if any members is mentioned for a com-

mittee or to take part in any way there is to be a ready response, each one determining to do the very best she can in the best way possible to her.

Then we should be most careful in allotting papers to see that we give suitable subjects to suitable people, that is, in their special line of work, and it would not mean near the labor in preparation. If you have a man or a woman in the neighborhood who excels in any particular line of work, utilize them for addresses or demonstrations, in preference to outside talent. Of course, I would never like to pass by anyone who might be with us and capable of giving instruction in any line, but make that one an extra and depend upon the talent that you may have in your own locality.

Keep before the members the thought that our meeting together from month to month means more than a pleasant afternoon spent together. Our meetings are a failure unless we derive some benefit; feel that we are uplifted and better women, able to return to our homes with lighter hearts and nobler aims, with a broader outlook of life, ready to acknowledge our failures and shortcomings, perhaps not openly but by our future conduct showing determination that, to the best of our ability, we will adopt the very best methods for our home life, the training of our children, and the betterment and uplifting of our churches, school and communities. Give each member something to do. Do not have one member on two committees. Make each one feel responsible for a certain part of the work and that the success of the meetings depends on the individual effort.

If we in our Institute work expect to do much good and use our influence to the best advantage, cliques must be abolished, we must all stand on one level.

At one of our meetings two members gave as their reason for joining, that while they enjoyed our programmes, for they were so interesting, they particularly admired our promptness. I would suggest as the only way to do this faithfully is to draft your programme (even to the smallest detail) before coming, allowing so much time to each number. When you give out a paper to anyone, state definitely how much time will be allowed. You will soon get the members in a good business-like way of doing things. Place a watch before you on the table and adhere strictly to time. Remember that it is always better to stop with the audience wanting more than to have them bored to death, no matter how good the paper may be. Do not allow awkward pauses during the meeting. The President should read up thoroughly any subjects that are to be given and be able to conduct an impromptu discussion, so as to avoid disappointment, if the person appointed to give a paper fails to put in an appearance or send her paper. Carry out your advertised programme at all cost. Oftentimes these impromptu discussions are better remembered than a well-written paper. Do not let a few persons do all the talking. Draw out the backward ones by asking them questions upon subjects with which you know they are familiar, and before they know it they will become accustomed to hearing their own voices and will enter freely into the discussions. Encourage those taking part by telling them when they have done well. It is a weakness of humanity—the desire to be appreciated. As I understand Women's Institutes, they are not for the women who have ability and gifts for doing things well to monopolize all the time, but by the inspiration of their presence and their enthusiasm, to draw out latent talent in women who have not had the opportunities and privileges of their more favored sisters.

ADDRESS.

Mrs. John Darling, Lansdowne.

The Landsdowne Institute was organized in 1908. I knew nothing about Institute work at the time, but went to a meeting that was announced to be held in our town hall and addressed by a representative of the Department of Agriculture. I had no thought of joining the Institute, as I knew nothing of the work and our people knew nothing about it. Some of the ladies said, "If you will join, we will and you can be President." About fifteen signed their names at the close of the meeting and we elected officers. We said, "Now we must make this something worth while. It is for the up-building of the people of the community. It is to elevate the home. We know the objects; let us see what we can do." The hand book was sent us, together with a number of very fine papers which we appreciated very much. We began by writing papers, and have never failed to have one or two papers on some interesting subject at each meeting. We started out with about fifteen members and now we have about sixty. We have never solicited members. We went contrary to what was advised. We decided that we must make it worth while for the people to come, and that has been the object of our meetings. We have a number of ladies who are quite able to write, but they were diffident about it at first; now we have no trouble. Our meetings are attended mostly by the village people, although the country ladies come sometimes. One of our members, a former school teacher, asked her mother who was visiting her if she belonged to a Women's Institute, and she said, "No. Is it good?" and her daughter said, "Yes, you had better come." She came, was delighted and is going to join. She said, "It will mean so much in my life. I have been staying in too much." Now we never thought of asking that woman to come to our meetings. We find that meeting in a social way has been a great help. Usually the women meet with their own church people only; now we all meet together and find it very helpful.

Miss Gray came to us and gave us a lecture on "Human Nutrition." She used a chart with the different food values upon it. We said, "That is just what we want." Mr. Putnam loaned us one, and we appointed a committee of ladies to make a copy of it. We also have a chart of an animal upon which is indicated the different cuts. We find that a paper on food values is much more easily understood when we have the food chart before us, and all our members are being well drilled in the information which it contains. We conduct our meetings in the order laid down in the Hand-book, but we give about fifteen minutes to question asking. The members ask about any difficulties they have at home, and anything which we cannot answer is referred to Miss Watson.

We found it difficult to get the young ladies interested in the meetings, so we gradually got them to give us papers on things in which they were most interested. We had one paper on painters. We have never failed to get good papers.

One lady asked us what we do at our meetings, do we have singing? Yes, we have singing. There was a piano in the hall, but the man who owned it charged $2 an afternoon for it, and we found that was too much to pay. We had a deputation wait on the Council and ask them if they would not have a piano in the hall free for all. They did not see their way clear to do this, so we said we would buy one and give it to them and leave it there free, because our churches have their entertainments there. Each church has to pay $5 when they use the hall. Last June we gave a concert and made $60. Then just about a month ago, we had a

social in connection with the Farmers' Club. They asked us to join with them and provide refreshments and charge a fee. We made $30 out of that. So we now have $91.25 as a fund towards that piano.

Some of the young ladies wished us to take up the study of literature. I am expecting to hear from some of the older Institutes about this. We cannot see our way to take up literature now. However, we said we would have a roll call, and have each one answer to her name by giving a quotation from some author or reading a short paper. We are so happy to get back at those old books we had when we were children. We have quotations from Longfellow, Tennyson, etc., and this makes the meetings very interesting.

I am not going to tell you what is good to do, because you are older. You may approve of what we have done, or you may not. I have told you the facts. I expect to learn a great deal here. One thing I would like to learn is how to get the young people out. We want to make it worth while, so that they will want to be there.

ADDRESS.

Mrs. J. M. Godfrey, Port Credit.

This is my first attendance at a convention, and I must say that, although we knew of the numbers comprising our Institutes, the extent of the audience surprised me and I feel overwhelmed when I think of the power it represents. I think it is rather hard on those of us who are members of the new Institutes to have so many big guns ahead of us this afternoon. The addresses were so interesting and the topics have been so vital that I feel rather diffident about speaking to you and bringing forward something of a lighter vein. I have been asked to speak to you about our work in Port Credit.

We have paid special attention to the encouragement of gardening. This spring we offered three prizes of $25, $15 and $10, which were given by private subscriptions, to the places showing the most improvement during the summer, not the finest places. Our object was to get those who had done absolutely on work and have them compete with those who had fine gardens. We had a gentleman from the Horticultural Association of Toronto come and view the places and then he came again in August and those which showed the greatest improvement during that time won the prizes.

In addition to this we had two flower shows, one in August and one in September, which were very successful. We gave small prizes of 75 cents, 50 cents and 25 cents for the different varieties of cut flowers.

Now, as to our success. I cannot tell you just now, for it will take years to tell what the result will be. Our village is very prettily situated on the Credit River and we felt that our places could be made to look so much better by a little more individual effort. It was difficult to get people to enter the competition at all. The Horticultural Society of Toronto sent out 1,500 circulars asking the people to enter the competition for window boxes and lawns, and even when they canvassed whole blocks individually some blocks did not enter at all. Some of those who did enter did absolutely nothing, but some worked so hard that next year we expect better results. Some enter for prizes and some because they see the good results of their neighbors and we expect to see our village in a few years as near like Eden as humanity and our climate can make it. A garden of Eden.

and why not? God Almighty created the first garden and for their disobedience our first parents were driven from that garden, and some people seem to roam without a garden, never to strive to get that Paradise Lost. Why should we strive for streets of pearl when we can see the streets of diamonds and be surrounded with live, growing things more precious than rubies?

The people in the cities have many advantages that we in the country have not. They have all that art can give. Wonderful buildings, artificial parks, but we in the country can get right into the heart of things and let nature be our teacher. She is really our mother because we depend on her for our maintenance. Is it for this that we often forget the full measure of her gifts. Some days when we have the much needed rain, so much needed by the crops, is it because we look to that that we forget to look at the beautiful sunsets? Are we so anxious to keep the weeds out of our gardens that we forget all the flowers. I might take this as my text: "The world is too large with us; late and soon, getting and spending, we lay waste our powers." And why is it that this applies so much to our country? Those of us who have been in the Old Land must have been struck with the beauty of the gardens. How every workingman's cottage had its little plot of ground in front brilliant with flowers. How the public highways were as fine as our private drives, and the roadside garden prevails everywhere. Who has not heard of the wonderful hedgerows of England? Then why is it that there is a difference? I suppose it is because we are a comparatively new country. We have had to work so hard that we have had no time for the frills, but I think we have got beyond this, especially in the country, where it is the farmer who is reaping the benefit of the increase of living in the city.

Above all let me plead for the gardens. The busy farmer's wife who thinks she has no time to spend on the garden, if she would only snatch a few minutes morning and evening, would get something that would be worth the time spent, but they say "You have a man on your place to do the work." Well, I have, but I have a very large garden and I only have the man to do the digging, for, mark my word, turn an ordinary man in a garden and he will do more harm in an hour than one can repair in a day. (Laughter.) However, there are encouraging exceptions. Get your husband working, and the children. Whoever loves flowers loves children. On the place which won first prize all the work in connection with the flowers was done by a girl 15 years old. Get right down on the earth and the damp smell of the rich, red earth will be good to you physically and spiritually, and you will bring nature closer to you.

This is the message which we have in Port Credit for our sister Institutes. It may be that I am preaching repentance to the righteous. I see that most of your programmes have something on gardening; but spread it. When I see some of the places with the neglected roadside and the sordid lanes, I feel like saying more and more—"Go ye into all the world and preach the garden knowledge gospel to all creatures." It is not too late yet. Go and buy bulbs and preach all you can. May I read a little poem that has interested me?

"AT THE TRADING POST."

(Martha Haskell Clark, in the *Metropolitan Magazine.*)

Behind the little group of moss-chinked huts
That face the short-lived rays of northern sun
A tiny garden lies, a bit of home,
In hopeless courage planted and begun.

The seeds and slips, the dear, courageous things,
That hardy-hearted braved the cold and grew,
I brought, when side by side we faced the north
And left behind the garden that we knew.

So very few have lived, and yet to us
That tiny square of fragrance-breathing loam
Holds just a bit of heaven for our hearts,
And links us close with all we love at home.

A few short spikes of larkspur, dwarf and blue,
A ragged clump of crimson-centred phlox,
Some purple iris—inmates of the north—
And stunted rank of scarlet hollyhocks.

A patch of heartsease, golden in the sun,
To send us forth fresh courage for the snows,
And, greatest prize of all, a tangled bush
Blooms yearly with a single blood-red rose.

A fragrant Love rose, blooming there alone,
Through all the frequent stress of sudden storm.
While even through the long months' drifted snows
Love's flame can keep the little hearth-stone warm.

THE ORGANIZATION OF A COUNTY.

Mrs. W. M. Thompson, Canfield.

With all due respect to those who have selected this subject, I think it is rather late in the day to discuss it, as looking over our last year's report I find that nearly all our counties are organized, and then in our Hand Book the directions for organizing are so explicit that I think it is not necessary to add anything further as to how to organize a county. I have found it much better to consider the subject of how to maintain or perfect the organizations which were already formed.

Our worthy Superintendent has been pleased to compliment us on the the work done in Haldimand County, and perhaps I may be excused if I specialize on a few of the features of the work which we found successful in the county.

In the first place we have secured the hearty co-operation of the Farmers' Institute. While the Women's Institute is not confined to the wives and daughters of the farm, yet they do comprise by far the larger number of our members, and to them our Women's Institute has come as a god-send—perhaps not fully understood by the ladies in the cities with their multitude of church duties—and the monthly meeting of our Women's Institute in the country is often looked forward to with perhaps as much enthusiasm as a large social gathering would be in the city, and we are glad, Madam Chairman, to notice, as has been already mentioned to-day, that one of our latest branches to be organized is in our Provincial capital, of which we, in the country, are justly proud. There are so many of our members from the country, and the men on the farm are members of the Farmers' Institute, so we have our annual meeting at the same time and place as they have theirs.

Last year was the best yet. We met in the County hall. We had our officers' meeting in the morning. Adjourned at noon for lunch, which was a very simple affair. We had a caterer prepare lunch and we were ready by two. We had addresses by Miss Rose, who is always a favorite with the men as well as the women,

and Professor Graham. We had the pleasure of entertaining at lunch the members of the Farmers' Institute and also the members of the County Council who were in session at the time, and in this way we were truly representatives of the county. While the Farmers' Institute do not give us a grant, yet they do pay all expenses in connection with our winter meetings and also all the printing in connection with our annual meeting, and in that way we are able to make ends meet.

In the election of officers we follow the custom of the Farmers' Institute, by promoting the Vice-President to the position of President, thus securing to our Institute an officer of experience. The interest of the meeting then is in the election of Vice-President, for we have the thought in mind that she is to be President next year. This year we found the necessity of having two or more Vice-Presidents, as our First Vice-President has been ill ever since the election of officers and unable to attend the meetings. The Secretary, wisely or not, remains unchanged. We endeavor, as far as possible, to have all the officers from different parts of the county, thus giving them a greater interest in the work of the county. We have decided to pay directors' expenses, and in doing this we are able to have but one meeting a year, and we have this in the spring, when we make all arrangements for our summer series of meetings.

These meetings are a great help to us in the county work. We arrange with the Secretary to accompany the delegates. We should show all the consideration possible for the comfort of body and mind of our visiting delegates. It is very embarrassing for a delegate to find that no provision has been made for her reception at the station, and after a long wait she must make her own arrangement to drive ten or twelve miles to the place of meeting, perhaps to arrive late. It is quite necessary, therefore, that the Secretary look after all the arrangements for the transportation of the delegates, and also for their entertainment. We were very pleased to hear of the way the new branches are organized—to have a request for an organization coming from the place interested. It is much better to get a number of ladies together and talk up the matter beforehand and discuss it among themselves, and then to write to the district officers and let them arrange a meeting at their own convenience when delegates will be sent. The only failure that we have had has been where a branch has been organized at a winter meeting without any previous consideration on the part of the ladies themselves. While the district officers should be on the alert to organize new branches, it is well to have some of the ladies interested and have them make a request, and in that way you will be more likely to have a successful branch. The county officers should be on the lookout and ready to organize where they think advisable.

ADDRESS.

Mrs. W. R. Hollowell, Goldsboro, N.C.

I am very glad to look at the faces of an audience in Canada. I bring you greeting from away down south in Dixie. I left the cotton fields white, and I came through fields that were white with snow to Toronto. I bring, not only greetings from the south land from which I come, but I bring gratitude as well, when I tell you that the Women's Institute work in North Carolina was inaugurated by a gentleman from Canada, who sent up into Canada for a Canadian girl, and we tried very hard to keep her down there—the men as well as the women. Fourteen of our agricultural workers in North Carolina are Canadians,

and I am in Toronto only because one of the best Institute workers we have in our state, who comes from Canada, Mrs. W. N. Hutt, is down in Florida addressing the State Federation of Clubs. That enables me to be here. I am so glad that she is in Florida and I am in Toronto.

We have listened with the intensest interest to the ladies this afternoon. You are interested in many lines, the same as we are in our State. I am specially impressed by the earnestness of the women who have spoken. I have been interested for many, many years in the work of women. I heard Chauncy Depew make a speech in the city of New Orleans. He said a great many things, but there was a sentence I have never forgotten, and it is this, "Convert a woman to a principle and you have converted a generation. Convert a man and you have converted an individual." I am glad that the women of the United States and the women of the Provinces of Canada have come to the conclusion that home-making, housekeeping, the rearing of children are the grandest occupations in all the world. (Applause.) I am glad that the women have come to the place where they recognize that their work needs perfecting. It requires just as much brain and just as much care as any other work in the world. (Voice in audience, "More.") I am glad some one said that, because in an Institute meeting that I attended this summer, some one made the statement that it took more brains to farm than anything else in the world, and I replied by saying I believed it took more brains in the farm home than it did on the farm, because it was the farm home that made possible the farm.

I am glad to be with you and I know your meetings are going to be successful ones.

ADDRESS.

Mrs. D. McTavish, Port Elgin.

In beginning I would like to say to you fellow-workers how much pleasure it gives me to be with you again. I always enjoy meeting an Institute woman wherever I am, and when I come to these meetings and meet so many as I see to-night, it gives me inspiration for a year. It makes me feel ten years younger. It is about time I was going back.

I began in the Institute work a long time ago. In fact I was one of the first. They sometimes call me the mother of the Women's Institutes, and who would not be proud of such a family? I thought I had a good one of my own, but my adopted one far exceeds my expectations. I cannot express to you the pleasure that it gives me to meet with you all and to see so many familiar faces, those from whom I have received so many kindnesses. This Institute work is growing and expanding so that we can scarcely keep track of it. I attended the first convention nine years ago in Guelph. It was not long after we had organized our Institute in West Bruce, and when I went down I did not see one woman on the grounds making for the building. I met two young men, and I asked them if they could tell me where I could see Miss Rose. "No," they said they could not; "but there is a man coming down who would be able to tell you." I waited and spoke to him and told him what I was wanting. He asked me my name, and I told him. He said, "My name is Creelman, I will take you to where the meeting is," and he was so very kind. That was my first meeting with him, but I am sure any of you who have ever come under the influence of Mr. Creelman's genial smile will not wonder that I have been an enthusiastic worker in the Institute ever since.

To think of the small membership there was ten years ago to what there is now! It is really astonishing to think that now there are over 16,000 belonging to it. It reminds me of the proverbial grain of mustard seed, the smallest of all seeds, that was cast into the ground and grew and became so tall that the fowl of the air lodged in its branches. Now our Institutes have grown at such a rate that we are just like that. We have grown and expanded and the fowls of the air are not coming, but there are, I believe, other societies coming to join with us to-morrow night and have a union meeting. But, while we have expanded at this rate, we cannot claim it all as Institute workers. We must remember who it was that cast the seed into the ground—our superintendents—and they have not only started it, but they have watched over it and cultivated this Women's Institute, until it has attained the proportions that it has at the present time. Yes, they have had to prune it at times, too, but all that has been for the good and for the growth of it.

Our Superintendent, Mr. Putnam, is, I think, one of the most wonderful men. To think that he can guide and control an army of 16,000 women! He certainly is the greatest wonder of this wonderful age, and we ought to be proud of him, as I think we all are. The result has been very encouraging to all, and I would just like to mention a few of the ways in which we have been benefited. In the first place a great deal of knowledge has been disseminated. That is one of the first intents of the Institute. We have learned a great deal in our meetings from our discussions, and we have learned a great deal from the literature that has been supplied. In fact to look back now, say ten years or so, you can scarcely realize how much we know now that we did not know then, just through the Institute work. I think it is really astonishing. Then we have been benefited so much in a social way. That was mentioned by some of the speakers to-day. It is such a fine way of bringing all kinds of people together, women from the town and from the country associating with each other, and you know that between the two there was a litle stand-offishness. Sometimes the town people thought they were just a little better than the country people, and I do not know but what the country people had just the same idea. However, when they got together and got better acquainted they found there was very little difference between them. They found they were all working for the good of the home. The Institute unites all creeds and all kinds of people. They met in societies—the different denominations—the Ladies' Aid and all kinds of church work, but they were in little groups apart by themselves, and it was the function of the Women's Institutes to bring them together into an united whole, and that is how they will be the greatest good to the home and to the country.

Then, our ideas have been broadened. We have discussed so many subjects and read up so many things when we were preparing papers. Some of us had got into old ways of doing things and we thought that was just the best possible way, but, when we got other people's ideas, we began to see there were other ways of doing things better than our own, and we were able to benefit from others; so it is a mutual benefit society, giving and taking.

We have also learned to conserve our strength and thus improve our health and, instead of scrubbing and rubbing away at inanimate things, we have time to polish our own minds and do much in our homes that is a great deal better than the continual work and scrub. We have been something like Martha, who was attending to everything except the one thing needful. We thought, if we kept our homes immaculately clean and our children fed, that was about all there was to do; but we must not forget that we must cultivate their minds and ours as well and try to make ourselves better wives and mothers and better companions

to our husbands, and be those to whom our children can come to as confidants, because they would rather come to their mother than anyone else. We have learned that we must try to do all we can for our homes. That is the one aim, because whatever we do for the homes we are doing for the country. It is said the homes of the country are the strongest forts. We want, then, to make our homes as strong as we can.

Every phase of home life has been discussed, and we are scarcely aware of what the Women's Institutes have done for us. Last Saturday in Port Elgin we celebrated the tenth anniversary of our organization, and a great many of those who had belonged to the Institute for ten years testified to the good they had received during that time, and they are more enthusiastic now than they ever were before.

But what of the future; what work are we going to undertake? Now, I expect to be enlightened on that before I go home, but there are a great many things that women can do, not only for the home, but for the country. With all of our advantages we are very far from perfect, and whatever we do we are not suffragists claiming votes; but, if we ever come in contact with evil of any kind, let us be sure that our voices or our votes—if we ever have one—will be always on the side of justice and truth and purity, whether it is in the home or the State; let us always see to it that that is our aim and our object.

I believe a great future is before us; let us see to it that we are equal to the occasion. I think it was Paul who said, "Quit you like men, be strong." I would say, "Quit you like women, be strong." Because, I think, a good woman is one of the noblest things on this earth; one who cares for her home, her husband and her family, who is not trying to amass money, but who leads them to think of the higher things.

A COUNTRY HOUSEKEEPER'S IDEAS.

Mrs. S. G. Kitchen, St. George.

I mean by this a housekeeper on the farm. As I am a farmer's wife, and have been a housekeeper for thirty years, I should know whereof I speak, and am glad that as a girl I was trained in a farm home, as this experience, of course, has helped to make the task much easier.

The word "country" makes such a difference, for to a housekeeper it means everything fresh and pure and of the best quality—fresh butter, fresh eggs, fresh fruit with good milk and cream to tempt the delicate appetite and strengthen a weak stomach. The woman who cannot be happy and contented on a farm is certainly to be pitied, as she would be more unhappy and more discontented as homemaker or housekeeper in any other walk of life. Giddiness is not happiness, neither is fluency in society small talk. Knowledge of how to cook, and to know the varieties of food that should be cooked for a growing family, is more elevating in the life of a woman, as well as more important and interesting, than anything I know of. I have seen something of the housekeeping in other walks of life, and in other countries, and have had more cause to pity those who have had the home cares of other professions and occupations than those who have labored in the farm home.

Without system, you can have no real success, either in the house or outside on the farm. The farmer who does not know two, three or four years previously

just what crops he is going to grow on certain fields is not an up-to-date, thinking farmer. The woman who does not know the kinds of vegetables and fruit she is going to grow in her garden next spring is not an up-to-date, thoughtful woman. This part of the farm should belong to the housekeeper, and should be a part of the housekeeper's work. She should be above asking the men folks when and where she should plant her vegetables. She should be too independent to ask her husband's help, as there are men whom she can hire to assist in this work, and she should always have enough money in her own pocket-book to pay for the work when it is done.

One should know before the day's work is commenced what must be accomplished—health and weather permitting. It is not necessary to wait until seven in the morning and then wonder what we are going to have for breakfast. We should know the individual tastes of each member of the family. I think that tastes are principally formed from habit. Generally speaking, the kinds of cereals, the kinds of meat and the kinds of vegetables are liked by all the members; we certainly have a variety to choose from, and too many at a time is not necessary for good living in any family. I certainly would not make a slave of myself to prepare all the kinds just to please all the individuals that comprise any family. The principal thing to know is how to cook and how to serve all kinds that changes may be made frequently, but to attempt to serve the various kinds at each meal simply means nothing nice, nobody satisfied, and nothing well served, where one woman has the most of it to do, which is usually the case in the average farm house. If it is to be oatmeal porridge for breakfast, let it be cooked the day before and served with the evening's milk, just as it comes from the cow, and immediately cooled to 60 degrees before being placed in the cellar; this, with perhaps an egg, toast, fruit and coffee should be ample for any individual—substituting for the porridge some of the breakfast foods, especially in hot weather.

The noon dinner is the hungry meal for the farmer's family. Nothing is better than soup to take the edge off the appetite; one kind of meat with vegetables is sufficient, which, of course, should be changed as often as convenient. Most farmers in these days with their telephones and free delivery can be well supplied if they do not have what they require in their larder. But I would recommend that they go to their own chicken house for fowl, their own sheep pen for lamb, their own calf pen for veal, and their own sty for pork. There is no better dessert than custard or rice pudding, easily made when pure milk is so plentiful, as it is on the farm; this with a plate of apples, pears, plums or peaches on the table, when in season, should be good enough for anyone. The evening meal with good bread, butter, apple-sauce, fruit, biscuits and cheese should be healthful and not prevent one taking a good night's rest.

More thought and more painstaking is required in the cooking for a family than all the rest of the house work. I have seen many dyspeptic men and women, even before forty years of age, and it makes me shudder when I sit down to so many tables groaning with the loads of rich pies, cakes and canned goods that are sure in time to upset the digestive organs of even the healthy.

There is a multitude of other work in connection with housekeeping, such as mending, darning, washing and ironing; but this is of secondary importance with that of cooking. In these days, with carpet sweepers, vacuum cleaners and fireless cookers, housekeeping is a pleasure.

With a little practice one can soon learn to neatly cover the heel of a sock, or put a patch on the knee of overalls. This is economy and should be practised.

Making a fixed rule of washing on Monday, or worrying all day because the

visitors did not leave on the early train, so that we could be at the wash-tub regardless of weather, is silly in the extreme. I prefer to wait till the storm is over and the wind has calmed, even if it is Tuesday or Wednesday. The ironing should be done when other work demands a hot fire.

We can learn something from our city sisters—that is, to be at home a certain afternoon in the week, and let it be known among our neighbors that callers are more welcome on that afternoon than any other.

How can we succeed in promoting happiness in our homes? Why we, as women, fail in not doing more is because we undertake often to do the impossible. We sometimes marry the man with bad habits—the drunkard, the swearer, the spendthrift—the man who is too often in bad company, believing that he loves us so well that he would quit all these upon our request. That is simply making a bad start in life. Commence married life with a man without these bad habits, without much money, using his earnings frugally, and ninety-nine times out of a hundred your life cannot help but be happy and prosperous. I say again, start right. Live within your income and that income is sure to grow, no matter how large the family, you will always have plenty and to spare. If your husband is careless in business methods, help him to keep a record of his expenditures and liabilities, that both may know when accounts and notes are falling due, and plan to save and be prompt in meeting these liabilities.

I have not much use for these fixed allowances. Twenty-five dollars should be ample even for the well-to-do family to have on hand. All over this should be in the savings bank, and this twenty-five dollars, with the exception, perhaps, of three or four dollars pocket money, should be in the desk drawer of the house, to be used either by man or his wife as exigencies demand. A woman is not fit to be called a helpmate who cannot make ends meet on a dollar a day, or five, or ten dollars as circumstances require.

There is no excuse why the parents and older members of the family should not know at the end of each year how all the accounts regarding horses, cattle, sheep, etc., stand in connection with the farm, and approximate profit or loss upon each branch, so that an effort can be made to make them more remunerative. With this co-interest the epithet, "I told you so," would not have become a byword as applied to women in general.

Some foolish people envy the rich. Everybody has not the capacity to earn $25,000 a year, enabling them to live in large houses and wear fine clothes. I believe there is more real pleasure in living on $1,000 or under than over this amount. The rich have the greater responsibility, and, I might say, it is an utter impossibility to raise a family correctly amidst affluence and riches.

Parents should teach their children the value of small savings, and never to destroy anything that can be of service to themselves or others, even by repairing. It is only within the province of moderately poor people to successfully do this and should be a part of the mother's work. Wherein could there be a greater pleasure derived in life than so doing?

Above all, one who has so educated herself as to control her temper under all circumstances, meet adversity with a smile and see the silver lining of all the dark clouds of life—such a woman who can smile when the bread comes out of the oven underdone or burned, when the kitchen fire smokes, when the clothes will not dry, and when the children are unusually cross, will be more useful in a community than a Rothschild. It is a recognized fact that the greatest influence is wielded by persons of a cheerful nature. Like everything else it has to be cultivated, for those who have cheerfulness as a birth gift are almost as scarce as those who are born

with a gift of genius. The cheerful mother who sings instead of scolding has loving and obedient children; the smiling wife has the love of her husband; the jolly physician will cure patients that his more learned, but melancholy, brother would lose; a light-hearted pastor makes religion inviting and wins souls that a man of gloomy and sombre nature would drive into sin. Acquired cheerfulness means health, power and wealth, and sees prospective good in every present evil, and one smile can at least overcome a dozen sighs.

A woman never loses anything by being real. I can conceive of nothing more disagreeable than a woman who pretends to be what she is not, clothing and carrying herself in a manner unbecoming to her circumstances, and in other ways spoiling herself for her family and friends by being a sham. A natural woman is the greatest power in the world to-day. By her nature she conquers, whether she be the wife of a humble clerk or of a millionaire. She is the sunshine of her home, simply because she is her own self, and never tries to be what she is not. What a heaven we would have here if we would only learn to watch ourselves, watch our failings. There is no use of having so many shortcomings.

When we find that we are being envious because other people are having a nicer time that we have—cut it out. When through jealousy we commence to back-bite our neighbors, we must know that it cannot profit us, but do us harm—stop at once where we are. Perhaps there is nothing in life, not even intemperance, that produces so much misery as envy and jealousy.

"Man," says a well known writer, "is of all animals the most susceptible to creature comforts." A loving heart is all very well as far as it goes, but, if it neglects to season the soup and shows an utter forgetfulness where sock heels and shirt buttons are considered, it loses some of its enchantment.

Homes that really are homes are those where the love of the husband and wife are so deep that each cares only to have what will be best for the other and for the children. These men and women belong to no particular class. They are found among the highly educated, the middle class and among the poor. Such people are honest in their affection, honest with each other and honest with the world. These homes are not places for show, but what the name implies—places of rest, happiness and comfort. These homes may consist of only two or three rooms, or they may be palaces, yet the influence is always for good. It is such homes that make the world sweeter and better and promote success and happiness.

WOMEN'S INSTITUTES IN NORTHERN ONTARIO.

Dr. Margaret McAlpine, Toronto.

I am sure that it is a great pleasure for me to look over this audience and to recognize among the great crowd present so many faces that I remember so well as being kind hostesses in the past; and, therefore, in my contemplation of those faces, I fear the remarks which I had been going to give you on the Institutes in Northern Ontario have rather slipped my mind.

It was with a great deal of eagerness that I went north to attend the conventions in September of this year in Northern Ontario, my former home being there. In fact, my childhood and early days have been spent there, and, having a fairly intimate knowledge of conditions in the North, I was anxious to compare, one might almost say contrast, the differences between the Institutes in the North and those in the older settled parts of Ontario.

Many people have the idea down here that the Manitoulin Islands and Algoma and Rainy River are places of little account, so far as agriculture goes, that it is carried on in a slip-shod, rather primitive fashion, and, therefore, from an agricultural standpoint the country does not amount to much; of course, that is a conception altogether wrong.

New Ontario has tremendous possibilities. The Manitoulin Island, which I visited first, is 90 miles long and 30 miles wide. One-third is arable land; one-third, limestone pits, with not enough land on it to grow potatoes; and one-third, rocks or water. Well, it is in that one-third arable ground that the settlers remain and from which they carry on their activities. This convention was held at the south of the Manitoulin at a beautiful little spot called Mindemoya. It is not a city. It has a store, a post-office and blacksmith shop, but it has something else that impressed me tremendously. It has a skating rink as big as the Granite Rink here in Toronto; a skating rink to which the young people drive from the extreme east and west and patronize freely all winter, and really it adds very much indeed to the enjoyment of the rural life in that island.

When I got to Mindemoya I found two hundred women and a few men gathered. They had driven—for you must remember there is no railway and very few telephones. It still has the romantic cast of early days, and they drove distances of five to forty-five miles to participate in this convention. When a woman will drive forty-five miles to a convention she is in earnest and intends to make it go, and so they made it go. It was inspiring to listen to the reports of those outlying districts, and to know that Women's Institutes are formed in those sparsely-settled communities.

The afternoon session over, there being two hundred present, we had a picnic on the lawn with a background of autumn tinted leaves. There is no objection whatever to the cooking in Manitoulin Island. Anybody who wishes to go there to spend the summer will be quite satisfied in that respect.

At the evening meeting they had somewhere about three hundred people present; in a little town like that it speaks well for the enthusiasm of the Manitoulin people. Some of the towns in Manitoulin have very good Institutes. I regret that Gore Bay, the county town, has not an Institute. It would be a great help if they had.

Now the second convention was held at Sault Ste. Marie, and there were present about fifty from all down the line as far as Thessalon and from St. Joseph Island, and away up by Goulais Bay. I was very much impressed by the report of the delegate from Goulais Bay. She says that is the end of civilization; in other words, the end of the world. When you come to Goulais Bay, there are no more settlements and no more clearings, and that is where they work. The women come out and drive for miles and miles, sometimes ten miles, to come to the Institute meetings. They realize that it is a sort of Women's Club. Now you understand this is a day of women's clubs and institutes and organizations, and so the women at the end of the world at Goulais Bay have the same feeling and cannot do without their club, therefore they would not miss it for the world, and I believe they are taking up studies almost the same as we do in our centers. I am not sure that it was not Browning they were enjoying.

Sault Ste. Marie has no Institute in it, I am sorry to say, and I also noted there a lack of co-operation on the part of the town of Sault Ste. Marie, and in making inquiry I found that the fault did not lie with the townpeople, but with the country people, because they had not sought co-operation. I mention this because it is in direct contrast to the next place which we visited. In Sault Ste.

Marie they had two good sessions and an excellent luncheon prepared. The reports were most encouraging. The work is doing a great deal for the sparsely settled parts of Algoma. I have often been out in years past in different parts of Algoma and I can speak of this from personal experience. It seems to me that up there the women are very youthful. That is, of course, characteristic of a new country. We are apt to count age by gray hairs and wrinkles, and to fix ourselves up accordingly; but age is determined by the spirit that is in us, but these women right from the Manitoulin to the Rainy River and right out to the west have that spirit of youthful, juvenile spontaneity and enthusiasm which carries them right on and makes them count obstacles as nothing. I was impressed with one of the women—she may be here to-night. Some fifteen or sixteen years ago I had the pleasure of having dinner with her, and then this fall I happened to meet her as one of the leading ladies at that convention, and, I am telling you the truth, she looked fifteen years younger than she did fifteen years ago.

In Fort William—there is the place for Women's Institute Conventions. I see by to-morrow's programme that there is to be a paper on the co-operation of town and country women in the work of the Institute. Well, I just wish we could transport Fort William and Port Arthur and the surrounding districts as a convention on to this platform and give you a practical demonstration of this co-operation. I have never seen anything to equal it, and I am going to tell you some things to show you what I mean.

About fifty women from the surrounding country in the Thunder Bay District came out as delegates to this convention. They did not care anything about obstacles. Obstacles do not count with the New Ontario women, and they came out to their first convention—not the tenth convention when they were getting to be old stagers at it, but the first convention, and I was very much surprised to find that at the afternoon session there were five hundred women present. What do you think of that; fifty delegates and five hundred women present? How did that occur? Why did they meet with such success? It was this way. The women of Port Arthur and leading ladies of the town said to themselves—when we go to the country our rural friends treat us most hospitably, and when we have the opportunity of returning it we are not going to leave a stone unturned to give them the very best time it is possible for us to give them, and so they proceeded to do that. There are two daily papers there, and the women simply used columns in those papers for weeks before to urge women to help out in this Institute work. They hammered at it in the papers until the people could see Women's Institute in their sleep. The ladies of the town also formed themselves into committees. They had entertainment committees and programme committees and billeting committees. Everything arranged properly, and then after they had all that arranged they thought the thing would go all right. The fifty women came into the Institute and the women of the town managed the rest of it. Some of the women from the backwoods were delayed by a train being late and they walked six miles to get another train, so as to be on time for the convention. One woman said, "I would not have missed it for anything if we had to crawl on our hands and knees, it was fairly splendid." Another delegation of women were delayed by another train, and they telephoned that they would be late and probably would miss the convention. My hostess in half an hour had telephoned between the cities and had six automobiles go for the ladies, and had them there in time for the convention. Mrs. Conmee, wife of the member for Parliament, arranged to give the delegates a sail in her private yacht after the meeting. Automobiles were given freely for the entertainment of the guests during the time they were in the city. The mayor

gave an address of welcome, and in addition to the very kind remarks he said—I was surprised, too—he made the appeal for the enfranchising of women. Then the town gave a dinner to the delegates after the sail in the afternoon. The Town Council—and you want to get after the town councils—gave a most delicious dinnner, and had it well served, and saved the ladies that time and trouble that they otherwise would have had.

I am talking about Fort William to particularly impress upon you that this co-operation can occur to a most delightful extent between the town and the country women. There is no reason why it should not. There is a difference between the east and the west, even in Canada. There is such a lack of conventionality, such a responsiveness with the Westerners or middle Westerners, that they take up these things without any fuss or trouble. Why, the women simply said to their friends in Fort William: "You must not arrange for any afternoon teas; you must get out of your bridge parties; you must have everything free for that particular date, because we want to have a rousing convention—and, of course, they did.

Rainy River—that is, in the fire-smitten district—was also visited, and while, of course, it could not make the splash and splurge that Fort William did, still it was their first convention and they showed an earnestness that was inspiring. If any part needs a Women's Institute, it surely is Rainy River. One cannot help but admire the strength and courage of the pioneer woman, as well as the men, and they are there developing the resources of our country, and are they getting as much out of it as they should? It is our place to encourage them and help them out, because from those homes come our bravest men and some of our noblest women. At Rainy River I was most glad to hear one report, it was given extemporaneously. A lady got up and said: "We have just formed an Institute. When trying to organize we went around to the women and asked them if they would form a Women's Institute. Nearly all said 'No.' However, there were three women, sisters-in-law, who were all agreed on this one thing, anyway, that they ought to have a Women's Institute, and they decided to organize with themselves as members, each one taking an office. So the Institute was formed, and a programme mapped out and things went along very well and they thought they would ask the ladies of the locality to their second meeting. At the third meeting they gained one member." By the time I was leaving, however, they had got around among the people and the whole neighborhood had signified their intention of joining

Now, in closing, you might ask me, "Are the women of the North any different? Do they impress one as different from the women of the East? Have they any characteristic that is different?" I mentioned their enthusiasm and their spontaneity and their youthfulness. I want to say a certain thing did impress me concerning them, and I think you will agree with me, that nobody can be among big rocks and mountains and along big forests and wide expanses of water and not grow visionary, idealistic, and more or less spiritual; and it seems to me, although you hear people say that the Westerners are materialistic men, I can vouch for this, that the women are not. They are visionary. They see the visions, they have a hope and trust, inwardness and poise and strength of character that we do not often get to the same extent, though we may sometimes in the older countries. (Applause.)

THE CHAIRMAN: I suppose you know a great deal more now about the Institutes in Northern Ontario. It has been particularly interesting to me, because I

spent about five weeks, four years ago, at Manitoulin Island and organized a great many of those Institutes whose representatives were at the convention.

We will now have a reading by Miss Teskey, and I cannot give her any better recommendation than that she is the daughter of a good Institute worker.

HOUSE FLIES AND THE PUBLIC HEALTH.

By C. Gordon Hewitt, D. Sc., F.E.S., Dominion Entomologist, Ottawa.

In a city like Toronto, and in many other Canadian cities, the house-fly problem and the dangers resulting therefrom are of far greater and more vital importance than one is accustomed to find in other cities of less rapid growth and longer establishment. Certain facts, to which reference will be made later, are present which increase the potential danger, already very great, of these ubiquitous pests. Whether you penetrate the huts of the Lapps or swelter in the burning heat of an equatorial clime, you will not be permitted to forget the existence of the "domestic" house-fly; there are no means of escape; by street car, by pullman or by liner, it has a free pass—a fearless, dashing and careless mass of heat-infused vitality. Let the day be cool or dull, Musca domestica, as the great name giver, Linnæus, described it, is obsessed with inertia, but an hour's sunshine or a warm room and it is as attentive as ever. The activities of most living beings, not excluding man, are dependent on the great source of energy, the sun, but the question of temperature is a matter of most vital import to the fly and to those stages of its life history through which it passes in hidden preparation for its great adventure, the crowning of its career, its emergence as a fly.

How many people are acquainted with the lives of the things around them? The house-fly is too humble, too common a creature to stimulate thought on its origin, use in life and destiny; we are too concerned, those of us who have time to be concerned in these questions, in their personal relations and the house-fly is dismissed with a word of comment on its power of provocation and possible unknown utility. But public interest does not always slumber. Science disguised as the Prince Charming has at last succeeded in awakening this Princess. The mantle of mystery and veil of ignorance have been torn off, and the house-fly stands alone, known and condemned with clear convincing proof that it must be classed with the mosquito as one of the scourges of man and destroyers of his children. Instead of being the harmless, bright little insect, though annoying by its attentions, it is the embodiment and emblem of filth swathed with the germs of decay.

What are the facts? They are, that no house-fly can be caught indoors or out of doors that is not carrying on its legs and body bacteria of all kinds and the spores or moulds and other organisms that accompany decay. No living fly is free from germs: the existence of such would be more than a miracle. Its legs and body, proboscis and wings are covered with small hairs and bristles, so that its legs may be compared to fine bristle brushes; it frequents every kind of filth imaginable and besmirches itself with the microscopic bacteria and other decay-producing organisms of which it cannot possibly rid itself, and flies about, a winged and wandering bundle of bacteria. All this might be expected as a result of reasoning alone, but such would not be proof, and the proof is astonishing in its vindication. Any house-fly, whether caught in one's room or out in the open and allowed to walk over a medium suitable for the growth of bacteria and moulds, will deposit the germs of these organisms in its tracks, which in a short time will yield colonies

of bacteria and decay-producing fungi. This experiment has been performed times innumerable, and not only does this take place in the warm summer months, but I am able to show you a collection of bacterial fungal colonies obtained from the feet of a fly caught in one of my rooms at the Experimental Farm a few days ago. One of the most interesting and convincing experiments to prove that house-flies normally carry about the spores of fungi and bacteria was made by my friend and colleague, Mr. H. T. Gussow, who caught three flies, the first in his room (in London, England), the second in the street, and the third on the household dust bin. From the first of these he obtained 30 colonies comprising six kinds of bacteria and six colonies of four species of fungi. From the second he obtained 46 colonies comprising 8 kinds of bacteria, and 7 colonies of four species of fungi, and from the fly caught on the dust bin he obtained 116 colonies comprising 11 kinds of bacteria, one of which is only found in the intestinal tract, and 10 colonies of six species of fungi.

It does not require any play of the imagination, therefore, to appreciate the ability of house-flies, if they normally infect themselves in this manner and carry about such germs, to infect themselves with the bacilli of typhoid fever, tuberculosis, infantile diarrhoea, and other similarly infectious diseases. Typhoid bacilli have been obtained from flies frequenting places where the disease existed. It has been found that such flies will remain infected for some time, and also that typhoid and tubercular bacilli can pass through the digestive tract of the fly in a virulent condition and that their dejecta are infective. It has further been demonstrated that flies reared from maggots which have been bred in matter infected with typhoid bacilli are infected with the bacillus. In the South African and Spanish-American wars flies were responsible for more deaths than bullets. Enteric fever in those wars carried off its thousands, which was not to be wondered at, in view of the prevailing sanitary conditions with open latrines frequented by incipient cases of enteric and myriads of flies swarming indiscriminately about the latrines and the mess tents. On a smaller scale similar conditions occur in the unsanitary districts of our towns and cities where the house-flies frequent indiscriminately and in turn the privies and kitchen tables. Once typhoid establishes itself in such places, the house-flies will account for the subsequent spread of the infection. The warmer the weather, the more active will the flies be, and with greater ease and rapidity will the disease be spread.

An allied disease, infantile or summer diarrhoea, is responsible for the greatest mortality among young children during the summer months or third quarter of the year. The specific cause of this disease has not been satisfactorily determined as yet, but it is probably a germ allied to the typhoid bacilli, and, in the same way that we know that the mosquito carries the germ of yellow fever, although it has not as yet been discovered, it is fairly certain from statistical and circumstantial or epidemiological evidence that house-flies are the chief agents in the dissemination of this disease. I have prepared a chart extending over a period of twenty years and giving the number of deaths per thousand due to this disease, and the mean temperature during the third quarter of the year in a large English city, and it will be seen that with the exception of one year, wherever there has been a rise or fall in the mean temperature for the third quarter of the year, there has been a corresponding rise or fall in the number of deaths: associated with a rise or fall in the temperature would be an increase or decrease in the number of flies, as the two are intimately connected. A high temperature is responsible for a more rapid development of flies, and therefore for an increase in their numbers. The shortest

time in which I and other investigators have been able to rear house-flies through all the stages of their life history, that is through the egg, larval or maggot and pupal stages, is slightly over eight days by keeping them at a constant high temperature. It was also found that in ten to fourteen days these flies could lay eggs. As each fly is capable of laying from 120 to 150 eggs in a single batch, and may lay six or even more batches of eggs during its life, it is an easy matter to understand how a single fly may be responsible for an incredible number of descendants during a single season, and in the light of these facts, the enormous number of flies present in a hot season ceases to be a matter of wonder, and still more so when it is learned "where they all come from."

The chief and favorite breeding place of the house-fly is in stable refuse, which may sometimes be found to be literally alive with the "maggots" of the house-fly. In a city like Toronto, where stables are located behind houses in a great many streets, and each single horse stable has its pile of refuse, is it to be wondered at that house-flies are so numerous? It is little use complaining about these pests, and potentially the most dangerous pests we have, while such conditions are allowed to exist. A single refuse heap will supply a whole street with flies; a single, unclosed and not frequently emptied refuse bin will colonize a house, for they breed in incredible numbers in waste and decaying vegetable products, such as accumulate in the household refuse bin. All decaying and excremental substances, provided the temperature is suitable, serve as breeding places for house-flies, and in these facts lies the solution to the house-fly problem which we are compelled to face if we would reduce the infantile mortality rate and the death rate of typhoid fever. There are two ways of dealing with a nuisance, the one is to abolish it; the other to render it innocuous. Boards of health and local authorities should make it illegal to keep stable refuse exposed for more than six days, that is, a period of time less than that required by the fly to pass through its complete development from egg to fly. Within that time it should be compulsorily removed to well without the boundaries of the city. Refuse bins should be similarly treated. Refuse should be burnt in public and municipal destructors, and it should be made compulsory to keep refuse receptacles closed, and consequently fly-proof. The alternative, to render such nuisance innocuous, can be accomplished by the provision of darkened fly-proof pits or chambers for the reception of stable refuse, to be frequently and periodically removed. Flies may be prevented from breeding in such refuse by treating it with such substances as chloride of lime or kerosene. By scattering chloride of lime over the refuse after each addition in the closed chamber, or spraying with kerosene (which is not so effective), the flies are prevented, should they have access, from breeding in the excremental or vegetable refuse. But the removal method is the most successful wherever it can be accomplished; and in the case of small stables this is not impossible.

These may seem somewhat utopian suggestions, but success has followed their adoption, and drastic initial measures are essential if it is desired to reduce, so far as is humanly possible, this evil in our midst. Until such measures are adopted the public must hold the offending parties responsible for the dangers resulting from the germ-carrying powers of the house-fly; and it is no small matter to be responsible for an unnecessarily high and reducible infantile mortality, not to mention the increased possibility of the rapid spread of outbreaks of typhoid fever, to which new and rapidly-growing cities are especially liable. In houses it is not sufficient to provide fly screens to windows and doors, but such foods as milk and sugar, to which flies are especially attracted, and which are more than usually suited

for the reception of whatever germs they are carrying, should be carefully covered with muslin. A fly should be regarded in its true light as a winged carrier of disease and decay. The sooner this is realized the more speedy will be the advent of more healthy and less dangerous conditions. Time was when the fly acted as a scavenger, its larvæ destroying by disintegration decaying substances. Its function has now been superseded by health and sanitary authorities, and now its sole function is that of a danger signal. Wherever flies abound, in such places will refuse and decaying substances be found, and on such occasions it will serve as a disseminator of the germs which are associated with such substances. If we are to reduce the mortality from these infectious diseases and make our towns and cities more healthy, the house-flies must be reduced. The time is past when these ideas were considered the alarmist croakings of scientific cranks: we have the facts before us which condemn in no unmeasured terms this most serious pest—the common house-fly.

ADDRESS.

DR. C. J. HASTINGS, MEDICAL HEALTH OFFICER, TORONTO.

I have a very satisfactory and plausible excuse for not saying anything, and I am sure you will be quite willing to accept it in view of the lateness of the hour. I have contracted a very severe cold, which is rather a bad advertisement for the Health Department of Toronto. I am sure we have listened with intense interest, and we are under a very great obligation to Dr. Hewitt, and I simply desire to say that I most heartily endorse every word he has said in his reference to sanitary reforms and the possibilities of them. I feel very hopeful of the possibilities, so far as Toronto is concerned, and while I have the very highest appreciation and admiration for those concerned in the beautifying of our city, I certainly hope that the boulevards and parks will stand aside and say, "Madam Sanitary Reform, after you, my dear Alphonse." If we have sufficient moneys left to beautify our city after we have established sanitary reforms which are necessary, then I think we shall be only too delighted to do it.

I was thinking, when the reference was made to the dangers to public health of the house-fly, that if it were possible to throw on the screen the number of lives that have been sacrificed in the City of Toronto, and in the Province of Ontario, and in the Dominion of Canada, in the last twelve years, from preventable disease, and if we divided that by ten and sent the intelligence to Ottawa and to the Parliament buildings here in Toronto and to the various municipalities, that one tenth part of that number of good Jersey and Holstein calves had died last year from preventable disease, there would be a special meeting of the Cabinet called and a fabulous amount of money voted immediately to overcome this awful plague. (Applause.) But, unfortunately there is no monetary value yet placed on human life; when you come to weigh human life in the scales of dollars and cents, so far as parliamentarians are concerned, there is not much doubt as to how the scales will stand.

I again wish to express my very hearty appreciation of the very able address we have listened to, and I heartily endorse all that the Doctor has said.

ADDRESS.

Miss L. K. Farlinger, Morrisburg.

As a representative of one of our Eastern Institutes, I consider it a very great honor and pleasure to preside at this morning's session. I must admit that in Eastern Ontario we are not perhaps as progressive as you are in Western Ontario. The Women's Institutes have been organized only within the last three or four years with us, but I think they are doing excellent work. The branch which I represent, Morrisburg, is three years old, but in that time we consider that we have made good in the line of work that we have followed particularly. We have been working particularly for our town library, which was in a most deplorable state, both financially and for accommodation. The quarters in which it was situated were anything but sanitary. The Women's Institute has taken in hand the matter of popularizing our library, with special attention to the juvenile department. We think it is an excellent idea to get our boys and girls to attend the library and follow up a course of reading, so the Institute is endeavoring to popularize our library with everybody, particularly with the boys and girls of our town.

It is a very great pleasure to meet with representatives from all over our Province. This annual convention is the centre around which we can rally and discuss the problems most vital to us as women home-makers, while the great number of Institutes each year shows that we are making good. We come fresh from the work of our respective Institutes, which shows that our work is a real living thing. We are a part of the whole, and each part is necessary to the whole. Let our work mean to us the being our best and doing our best that all the world may be the better. "Give to the world the best you have and the world will give back the best to you."

In these days we hear so much about the conservation of the resources of our country. I think our Women's Institutes are doing a splendid work in teaching us the conservation of our women's energies. We have been too strenuous in the past, and I think we must call a halt on our tendency to live the strenuous life, but the halt must not be idleness, for they say a woman's work is never done. Man knows that all work and no play makes Jack a dull boy, but what about Jill? Well, I think she is tumbling after him and realizing that her best work is accomplished when she balances it with proper recreation. Undoubtedly the greatest need of the women of to-day is the adoption of order and the cultivation of poise, and in following up our Institute work I think we can find the remedy for the one and the ground for acquiring the other. Let us broaden our lives and have more real pleasures. If we have the highest and truest ideals of life, let us not be afraid of public opinion, but let us cut out many of the unnecessary parts of our work; the non-essentials. Take time to cultivate an interest in people and things outside of our home, and by thus broadening our scope we can refresh and renew our mentality. And, after all, our minds have much to do with our conditions.

What a force for good our Institutes are getting to be. What an excellently drawn-up constitution we have. Beginning with the home, its building, its sanitation, preparing of our foods, care of the children, the social life of the home, the duties of citizenship, and the good of our country—how perfectly balanced it all is, and as women we have so much to do with it all. Are you not proud to be one of the great army of workers? Building up our magnificent country and making it a power for good? Our Institutes are teaching us to make social and home life in the country districts sufficiently attractive and helpful, that we hope to be able

to induce the boys and girls to remain in the country instead of flocking to the city, as they have been doing. They are teaching us to raise the standard of agriculture and everything that gives true character to country life. They are teaching us scientific body-building, and the principles of right living. Let us see to it that we prove ourselves worthy of the aims and objects we are working for. What splendid opportunities are presented to us. True, these are about us at all times, but most of us are looking so far away for them that we fail to see the little ones at our door. Now each one is just in the place best fitted for her. The thing you are doing can be done just a little bit better. You have one opportunity and then it can be brought to the attention of other people who want that particular thing done, and that is another opportunity, and so on. There is no limit to the good we can do.

Now this morning we are to have the pleasure of hearing some of our Institute workers from Northern Ontario. I have much pleasure in calling upon Mrs. Goltz, of Muskoka.

ADDRESS.

MRS. H. L. GOLTZ, BARDSVILLE.

I feel as if you are all my sisters. I feel as though I ought to know you all just because you wear the little badge. It seems one touch of nature makes the whole world akin. You cannot imagine my pleasure in coming here from the backwoods of Muskoka.

I feel there is very little left for me to say after all I heard yesterday. We have not a very large membership. We live in a very small place, but we are very energetic, and we never miss our meetings, rain or shine, and we try to do everything to make them as interesting as possible.

We raise our money by getting up concerts and by having socials. Our Institute has not been organized very long, but we feel now that we would not like to do without it. We spend our money in improving the church grounds and giving prizes at the fairs for the best fruit and bread. We started that quite lately and we found it quite interesting for the Women's Institute. Now, I do not think there is anything more that I can say which would be of interest to you. I just want to say that I am proud to be a member of the Women's Institute, and I am glad to be here.

THE CHAIRMAN: In our work we sometimes encounter difficulties which we cannot solve at our branch and district meetings. Now we are to have a question drawer here this morning and Mr. Putnam will take charge of it.

QUESTION DRAWER.

MR. PUTNAM: We have received a great many questions, some of which would not have been asked, had you been more familiar with the Hand Book. There are some of these questions which we will answer briefly in a general way. There are other questions which we think it would be well to answer through the official organ, *The Home Journal*. I will, therefore, answer just a few of them at this time.

Q.—Could not the membership year begin in May instead of June?

A.—I do not see the object in that. One of the Secretaries endeavors to collect her membership fee in May so as to put that money in the financial statement for that year. It is expected that you keep that money and carry it over to the beginning of the next year, so that the receipts for membership will correspond each year with the number of members on the roll.

Most of the other questions are fully answered in the Hand Book; and we have sent copies to all the officers, Presidents, Vice-Presidents and Secretaries of District and Branch Institutes. Others who want these books may get them by writing direct to the Department. We have to get out new Hand Books every few years, it seems, and to furnish the whole membership with a copy would mean a very great expenditure, and, we think, a very unnecessary expenditure; so we send Hand Books to those who are officers and others who are interested sufficiently to write to the Department for one.

Q.—Some person has asked the old question about refreshments at Institute meetings. I will ask Mrs. Brethour to say a few words about that.

MRS. BRETHOUR: I think that rests with each branch to decide. We have not found it expedient to have refreshments at each meeting. It seems to take away the effect of the programme, and the hostess is thinking of the kettle boiling, and not listening to the meeting. We have refreshments only twice a year. The hostess provides the tea and sugar and cream and the others bring the rest of the refreshments. I do not think it is well to let our meetings run too much to refreshments, because we can get our meals at home.

A MEMBER: That is not our idea. The social part is after our meeting is over, and we have the sandwiches and cup of tea. That is just how we get our members.

A MEMBER: I come from the town of Preston, where we have a membership of over ninety. We found out that our meetings were not successful when held in a hall, so we now hold our meetings from house to house, and we assist the hostess in providing refreshments. Some of the ladies come half an hour earlier than the rest and they have everything ready before the meeting starts. At the close of the meeting we help her clear up. We have some ladies who walk in two and a half miles, and it is very nice for them to have a social cup of tea before they go home. We have found that it is very beneficial to our meetings.

MR. PUTNAM: This is a matter which must be left to the good judgment of the individual Institute, but we regret that a few Institutes have allowed the lunch part of it to become the most prominent and apparently most interesting feature. We trust you will not do that. There was another suggestion thrown out, that meetings were more likely to be successful when held in the private home. There have been several instances brought to my notice where an Institute was about to disband, but immediately after they adopted the method of meeting in the homes instead of in a hall, they took on new life and met with success.

There are some questions before me regarding the relationship between the Farmers' and the Women's Institutes. In the early years of the Women's Institutes they received a grant of only $10 for the riding, no matter how many meetings they might hold within that riding during the year, and the former Superintendent, President Creelman, advised the Women's Institutes to apply to the Farmers' Institutes for assistance. That assistance was given by way of grants—very substantial grants in some cases—and also by assisting in paying for a lady delegate at the winter meetings. Since that time, as you all know, we have increased the

grant to the Women's Institutes, and the County of Simcoe, where they have about thirty branches, gets a grant of something over $200. The Farmers' Institutes—three in the County of Simcoe—get a maximum grant of $75, so you cannot expect that the Farmers' Institutes are going to help you very much, for you are much more liberally treated. I will not say liberally, because you are treated according to the work you do, and, generally speaking, you are entitled to more than you receive.

You can co-operate with the Farmers' Institute officers chiefly in securing speakers for the winter meetings. It is hard for us to lay down any hard and fast rules in the Department regarding this matter, but we do plead for a definite understanding between the officers of the Farmers' and the Women's Institutes, and a co-operation in accordance with the finances at the disposal of the two organizations; and we also plead with you to co-operate in the holding of excursions to the Agricultural College in the summer. It means that you will share the profits, and, in some cases, those profits amount to $50, $60 or $75.

Q.—Some questions have been asked regarding the filling out of report forms?

A.—Should any report coming to the Department not be properly filled in, we will give instructions to the Secretary by letter. We are pleased to note that the report forms and the financial statements show a very great improvement over former years. The women are becoming just as proficient in matters of business connected with the Institutes as the farmers who have had thirty years' experience.

We would like to have just a word from one of our workers who has not, we regret, been with us very much in our general Institute work or at our conventions for several years. She has been attracted by offers from across the line. However, we welcome her back and trust she will not be too severe on our Canadian women when she makes comparisons—Miss Millar, of Guelph.

ADDRESS.

Miss Bella Millar, Guelph.

Institute work in New York State is not carried on in the same line as here. They have not organizations throughout the country as you have, but the work is carried on from headquarters. Up to the present time they have no Women's Institutes, but the women attend the meetings of the Farmers' Institutes and seem very anxious to attend.

The question box is made a very prominent feature in New York State meetings, and the first part of nearly every meeting is taken up with the question box, running for an hour or longer, and the women ask questions, as well as the men. They have a woman speaker at a great many of their meetings, just as we did long ago. A great many of the meetings there last for two days.

For the last two years they have carried on what we call Institute Schools. The Institute lasts for three or four days in a place. Of course, where there is an Institute School they have a great many extras on the programme. Perhaps there are eighteen to twenty-one speakers, and they have meetings in two or three halls at the same time. At these schools they have special speakers for the women's sessions. Last year, in some places, where we had two-day meetings, we had a separate session for the women in the afternoon. It was hard to get the women

to leave the Farmers' Institute meeting to go to the Women's meeting. Of course they enjoyed it very much after they got there, but up to that time they had never had a separate session. Four years ago there was a Women's Institute series of meeting in that State, and then three years ago a much longer series was carried on with five or six speakers on the delegation. We stayed two days in a place. The first afternoon after the address of welcome and the reply to the address of welcome, there would be a demonstration in cooking, then at the evening session there would be perhaps two or three addresses and some music given by the people of that locality. The next meeting would be a discovery meeting, and every woman who came was supposed to tell something she had found that made her work easier, or, if she wanted to ask questions, she could do so, and, of course, a great many questions would come in, and a great many helpful ideas would be gathered. Then the closing meeting would be in the afternoon, and that session would be "Women's Work in the World," and representative women from other organizations would be there. We had the President of the Women's Christian Union from New York address us, and we had a talk on "Women's Institute Work as Carried on in Ontario," and we had women's work in different lines taken up at that session.

There was an exhibition of women's work in nearly every place, and also of children's work. There would be an exhibition of canning fruit and of pickling. The children had exhibitions of sewing, kindergarten work, samples of drawing, and things of that kind.

I think, perhaps, I have told you all there is to tell, giving you an idea of just what they have done. Of course, they do not feel that they have come to the place that we have, but in the places where they have held a Women's Institute meeting in that State, the women will never be satisfied until they have meetings similar to yours. They are interested there in what we are doing, and we must do good work, because we are looked to as an example.

THE CHAIRMAN: A very important question in connection with our Institute work is the place of the girls in the Institute. If we do not interest the girls in the work now, what will we do for the women—the girls are becoming women. We will now hear from some of the Institutes as to what they are doing in this line of work. I will first ask Mrs. Rush, of Mimico, to come forward.

ADDRESS.

MRS. J. W. RUSH, MIMICO.

I bring you the greetings of the Mimico Women's Institute. We have only been organized four years. Now we have twenty-nine members, and we hold our meetings every month in the different homes of the members. We have very successful meetings. Papers are read on different subjects and demonstrations given. Miss Gray visited us three times and gave us addresses. Miss Campbell at our last summer meeting gave us an address.

We have found it difficult to get the young girls to attend the meetings, because, when they leave school, they either go into college or to work. On Saturday afternoon we invited the young girls and they were very much interested in Miss Campbell's address. We had them dress in white and serve the refreshments that day. After our meetings we always have refreshments. The social half hour after

the meeting is very beneficial, because, while we have in the village the Ladies' Aid Societies of the different churches, the Institute brings all denominations together and makes us much more friendly.

We had our programmes published in booklet form, but we found it was not satisfactory. They were often lost or mislaid and the ladies would forget the date of the meeting, so we had our programmes printed in the form of a wall card, and they were very much nicer. We distribute them at the beginning of the year, and each card has the place of meeting and the date on it, so that it can be hung up and easily read.

In regard to the refreshments. The hostess provides the tea and bread and butter, and the ladies who live near take all the cooking, so that we have very simple, but very nice lunches.

I do not think Mr. Putnam need fear for the girls, because, when they marry, they join the Institute. I think there are only two unmarried ladies in our Institute.

We had no particular definite work until last winter. We discussed planting trees and beautifying our village. Mimico is now becoming an incorporated village, and in January the reeve and council will be elected, and then we hope to have their help and co-operation in carrying out our plans.

I hope we shall all raise the standard high and not be weary in well doing—of raising the standard of home and country up to God.

ADDRESS.

MRS. GORMAN, ARKWRIGHT.

In our Institute we have a lot of girls that come with their mothers. They are not married girls. We want them there before they are married, and then they will know how to manage their own homes. We have always made this provision in arranging each meeting, that the girls are to provide the music, either vocal or instrumental, and recitations or readings, and leave us older ones to talk about the more serious matters. In that way the girls all know they have to do something when they come, and when you have something to do with the work, you are more interested than when you are only a listener.

Last August we had a little change. We had a competition for the girls in cake making. We offered three prizes. Each girl that entered the competition baked her own cake and brought it to the meeting. The cakes were put in a room. We appointed three ladies as judges. The girls went into the room and cut the cakes and the judges went in after and judged the cakes. The judges did not know who were in the competition, so that there was no possibility of partiality being shown. We had a very nice time, and the girls enjoyed it, and seemed to attend the meetings as well, if not better, than before. The first prize was a cream pitcher; the second a sugar bowl, and the third a vase—something that would be of use to the girls when they start housekeeping.

Now for our meeting in December we have on the programme "Home-made Candy." The girls are to provide the candy and to tell us how they made it. And as they have to make the candy and tell about it, we older members are taking the musical part of the programme; so we have a change, and in that way we keep the interest up and have good meetings. We always try something different for every meeting.

ADDRESS.

Mrs. (Dr.) Proudfoot, Fullarton.

I do not know that I have, perhaps, as much to say on the subject of girls as some of the others who have been talking to me since I came.

The girls are taking a very lively interest in the branches, and they are very much interested in doing a great deal of good. To me, it seems, that the musical part of the programme is particularly the girls' part, and I wish I could convey to the girls in Ontario the pleasure it gives to an entertainment of any kind to have music and the elevating influences which it has.

I was very much struck at a public meeting we held when we had the pleasure of having Mrs. Stalk as a speaker. In our village and country it is very hard to get girls to take part, but that evening two little girls, about ten and twelve years of age, played a simple two-step. We have in our village, what every other village has, a percentage of boys who like to disturb meetings, and I listened while that was being played, and I think you could have heard a pin drop, and, if I do nothing else, I want to impress upon the girls that they cannot do more good than to use their musical talents.

The education of to-day for the girls is great, to put it mildly, and the girls are clever. When I went to live in the country ten years ago I was amazed at the cleverness of the country women and I am proud of them. I do not want to say anything that will offend the city ladies, but I think the country women, with their talents and the way they make the most of their opportunities, are wonderful. The country women in the past have not had the opportunities which the city women have had, and some of them are fighting against great odds.

The energetic country woman can compete in any line in getting up papers, etc., if they will only lay aside their reticence. There is another thing I want to say, and that is, I think we have a personal responsibility, and the girls have, too, towards each other and towards the world in general. We are not here just to live our own lives. We are here to do what good we can for other people, and we can do it in the Institute, and, if we know a good thing, we ought to pass it on.

No doubt the Institutes are doing a great work. I think there is no more important subject than that of sanitation. There are lots of things I would like to say, but I was only asked to speak on the girls and I think I have said enough.

ADDRESS.

Mrs. C. E. Horning, Hannon.

Last night I heard Mrs. McTavish say she was one of the oldest members. She said she had a large family. If she is the mother, I stand here to-day, perhaps to represent the grandmother or the great-grandmother, because I am a little older than Mrs. McTavish. South Wentworth has the honor of holding the position of starting the first Women's Institute organized in Ontario, which was formed on the 9th day of February, 1897. Mrs. Hoodless met with the Farmers' Institute in the little village of Stony Creek, which holds such a prominent position in history. When I look around this audience, I feel that Stony Creek holds a nobler position than ever before. We have here the mothers and the daughters who have

been active in carrying on this wonderful organization, and when I look over the faces I feel that we can truly say:

"And, departing, leave behind us,
Foot-prints on the sands of time;
Foot-prints that perhaps another
Seeing may take heart again."

That is the position of the woman who first started this first Women's Institute. She stood to the last hour of her life speaking for the betterment of women. She died on the platform speaking on something that would help our girls and women to raise the standard, and is it not fitting at this time to bring a memorial to this woman. I might read you a report of our annual meeting of the South Wentworth District Women's Institute held in Hamilton last June:

"In June, 1910, at the annual meeting of the South Wentworth Women's Institute, a committee was appointed, consisting of Mrs. Erland Lee, Mrs. J. H. McNeilly, Mrs. E. D. Smith, and Miss M. Nash, together with the District President and Secretary, to formulate a plan whereby a sum of money might be raised to procure a memorial of the late Mrs. John Hoodless, of Hamilton, who, at a meeting of the Farmer's Institute on the 9th of February, 1897, suggested and urged that a Women's Institute be formed. On her proposal it was decided to have a meeting the following week to discuss the matter. At that meeting, held on February 25th, 1897, Mrs. Hoodless so ably showed the benefits likely to be derived from such meetings of women, that the first Women's Institute in Canada was formed and officers elected, Mrs. Hoodless becoming Honorary President. A committee was formed to frame a constitution and by-laws for the Institute, which were presented and adopted at the next meeting, the membership for that year being eighty-six.

"Mrs. Hoodless gave the work her personal attention and greatly aided in making it a success, during the intervening years between its formation and affiliation with the Farmers' Institute. Also, until her death, she took a deep interest in the welfare of the same.

"The Committee consider that the most appropriate thing to do, that is within their power, is to ask the Women's Institutes of Ontario at the Annual Meeting in November, 1910, to adopt a request that each Women's Institute in Ontario contribute a sum of $2.00 to make a fund with which to purchase an oil portrait of Mrs. Hoodless, to be hung in the Macdonald Institute, Guelph, recording on it the fact that she was the founder of Women's Institutes in Canada.

Mrs. Erland Lee,
Mrs. J. H. McNeilly,
Miss M. Nash,
Mrs. E. D. Smith,
The District President of South Wentworth,
The District Secretary of South Wentworth.

I would like this discussed and I thank you very much for your attention.

A MEMBER: Is it according to the rules of the Hand-book that we should use our money in this way?

MRS. HORNING: We do not propose that. We thought that the women who felt that this great woman, who has tried to do so much to help us should be remembered, would help us in some way. If you feel that you can take your funds, Mr. Putnam can give us the word whether that is allowable or not. We talked that over at the convention, and we thought with our 16,000 members it would only mean an outlay of about two cents a member to get the portrait. I do not think there is one lady here but who feels that the members of her branch would respond and give five cents each to that fund. Some of you have large memberships. We want the question of each Institute giving $2 discussed. Perhaps some can give more than that by getting two cents a member.

Mr. Putnam: May I be allowed to remind you that special objects, such as this, should be provided for by special collections, or out of funds raised in some special way, and, as Mrs. Horning has suggested, I am sure that the women of Ontario will respond to this appeal. It is left with you to decide the matter, and it would be well for some person to make a motion regarding the question.

Mrs. Bailey, Maple: I have pleasure in moving that a special collection be taken by each Institute.

Mrs. Pritchard, Springfield: I second that motion.

After some further suggestions and amendments, the original motion was carried.

Mr. Putnam: Possibly it would be well for you to nominate some one to receive this money. It would be just as well to keep it separate from Departmental work.

Moved by Mrs. R. S. Stevenson, of Ancaster, and seconded by Mrs. D. McTavish, of Port Elgin, that the money be sent to the district secretary for South Wentworth, Miss Clara Walker, of Stony Creek. Carried.

ADDRESS.

Walter R. Nursey, Inspector of Public Libraries for Ontario.

I have been asked to say a few words on "Travelling Libraries." I should have much preferred speaking to you, but I have some statistics for your information which I could not commit to memory.

In 1892 the State of New York inaugurated the first system of Travelling Libraries. This proved so successful that the plan was soon adopted in other States. In 1893 the State Library of New York at Albany sent out a few libraries of 100 volumes each to the smaller cities and villages that were not provided with Free Public Libraries. These were to remain for six months, until exchanged for another case. The fact that 25 of the 28 states of the United States, now undertaking library extension work, have thus emphasized the worth of Travelling Libraries, testifies to the practicability of these methods, and to the universal acceptance on this continent of this form of auxiliary aid to the smaller libraries and the scattered reading community.

By 1899, following the example of New York, eight other states have adopted the Travelling Library system, and about 2,500 libraries, containing in all 115,000 volumes, were circulating through the country, bringing entertainment and instruction to thousands of people hungry for reading matter. To-day—ten years later—there are over 400,000 volumes on the wing, appeasing the appetites of the people. These 25 states are scattered from California to Wisconsin, from Virginia to Oregon, from Colorado to Vermont.

The system proved so flexible and useful as to attract still wider notice, and the sympathy of broad-minded men and women, philosophers and statesmen, philanthropists and educationists, who had the welfare of the more isolated communities at heart, welcomed the innovation. Few people, however, realise, many, be it said, not caring to do so, the almost incalculable value that these collections are to the rural reader as well as to the public at large. The uses of a Travelling Library and the far-reaching influence that it exercises for good, is impossible to estimate. If by accident an undesirable volume, masquerading under an innocent title and in modest attire, should steal into these sanctuaries of choice literature, its presence should at once be reported to those responsible, and the intruder deported.

It has been stated, and with admirable aptness, that the happiness of a country must be measured, not by the number of its magnificent palaces, but by the multitude of its small homes. So it has been argued that in the world of books, while we feel pride in the ornate and alluring city receptacles that invite us to exploit their comfortable corridors, flanked with gems of literature in costly covers, we should feel none the less deep interest in the small and well-thumbed collections housed in the rural library whose patrons know nothing, other than by hearsay, of the architectural grandeur of its metropolitan brother. Many a backwoods' shanty on the fringe of civilization, many a fire-side nook on the outposts of settlement, have sheltered valuable volumes, and many a boy and girl by the uncertain light of a fitful cabin fire have gained from these the inspiration of their future greatness.

To aid in securing this blessing for places remote from the hurly-burly of population the Travelling Library was conceived. It met with instant recognition, and, as you know, it has come to stay. By the means of this small, unpretentious, brown and ofttimes battered box, well-chosen books, many whose titles hitherto have been but dreams in the minds of hungry book-worms in country-side, bush-cabin or prairie shack, are now distributed in village, town and rural district, and the cry for help, even from the wilderness, is not unheeded.

To secure for the rural communities of this Province, access to books of instruction, entertainment, inspiration or charm, is the aim of the Minister of Education, who will extend to every man the opportunity—limited only by the generosity of the Legislature—to "get the most and the best out of life for *himself*, and so put the most and best into *his* life for his country."

I am given a few minutes to-day, through the courtesy of Mr. Putnam—the energetic official director of your aims—and through your own kind toleration—to tell the story of the creation and expansion of the Travelling Library movement in Ontario.

Precedent to this, a brief reference to existing conditions in the United States should be informing, for, after all, it is only by contrast with others that we can hope to properly estimate our own efforts and privileges. This brings me to the pertinent question, "What is a Travelling Library?"

While the definition is simple, the question of the scope of the libraries' possibilities is unanswerable.

Travelling Libraries, as most of you ladies are aware, are "collections of books sent to communities, associations or individuals for circulation." Women's Institutes come within the second of these classifications. But, as to circulation, "What of it?" Books are to the brain what blood is to the body. Without circulation blood is no better than water. Without circulation books are no better than bricks. Travelling libraries may be sent by larger libraries to supplement their branch work, or given by an association, or by an individual, or by a Province to supply its rural districts, care of course being taken that the Travelling collection is not used by any one who could or would otherwise obtain books by becoming a member of a Public Library.

But as circulation cannot be obtained without *publicity* you should resort to every expedient for announcing the arrival of the box, and prepare a cosy corner for its reception. The country editor at this stage should be your best friend.

As the Department has to provide against over-duplication, a system of selection and distribution is essential. For this purpose a special stock of books is set apart in the Inspector's branch. The Travelling Libraries of the Public Libraries of the city—not the state—of New York, the wealth of which city is fabulous, and has a population almost twice as large as that of all Ontario, contains 50,000 books,

require the services of seventeen assistants and have an annual circulation of 89,845 volumes.

The composition of these Travelling Libraries is a matter of vital importance and a much debated point. In respect to what proportion of fiction is permissible opinion differs. In attempting to solve this problem, it is not so much what the individual asks for that should weigh, but the principle of the "greatest good for the greatest number." It is well to repeat this phrase, which is not an empty one—"*The greatest good for the greatest number.*" A close analysis of this well-worn maxim reveals all kinds of possibilities. It would be business, I think, if these words of wisdom were pasted in every man's hat, and, if possible, in every woman's hat also. As to fiction, its proportion must be regulated largely by the common sense and perception of the collector. This scale of proportion is often regulated by the tastes of the consumers in much the same way as the flavoring in an apple pie. Some children cry for cinnamon, others prefer the fruit with no spice at all. Recognizing the importance and necessity for clean fiction—not forbidden fruit—the Libraries issued by the Department of Education contain from 20 to 30 per cent. of Fiction for adults and about 45 per cent. of miscellaneous reading matter, which includes: General Works, Philosophy, Religion, Sociology, Philology, Natural Science, Useful Arts, Fine Arts, Literature, History, and also 20 to 25 per cent. of juvenile books. The selection of these latter should be of first concern. For when children leave the juvenile branches for the adult section, they will have acquired the reading habit for a higher type of books—a habit once acquired never lost.

The Secretary of a certain Institute, and please do not ask the name, thought that almost *all* the books in these travelling libraries should consist of "*fiction,*"

Our Ordinary Travelling Libraries are of two kinds: (1) Fixed or Permanent, and (2) Elastic or Openshelf, and contain from forty to sixty volumes each. These are put up in stained pinewood boxes, with lid and lock, and divided lengthways by a shelf and are almost exclusively "fixed collections." All libraries are accompanied by classified lists. This method of Library extension is practically in its infancy. Only ordinary libraries, "fixed collections" have up to the present been shipped to Women's Institutes. In the future it is hoped to make provision for the special requirements of special communities. In addition to this, the Department, upon application and by arrangement, supplies the undermentioned Travelling Libraries for *Special* purposes:

(*a*) Public Libraries in industrial centres: technological collections, for the use of artisans and mechanics.
(*b*) Public Libraries. Collections for children only.
(*c*) Public Libraries. Collections for young men and women only.
(*d*) Library Boards. Library upon construction.
(*e*) Library Boards. Library upon administration.
(*f*) Library Boards. Library upon Cataloguing and Classification.
(*g*) Study Clubs. Library upon Canadian History or special literary subjects and travel.
(*h*) Individuals. Special collections of books for reading course.

Ordinary Travelling Libraries are loaned free from charge to the following:

(*a*) Small struggling libraries.
(*b*) Groups of taxpayers living in hamlets.
(*c*) Rural Communities.
(*d*) Women's and Farmers' Institutes.
(*e*) Mining, mill, and other industrial companies in New Ontario.
(*f*) Poor schools, not possessing a school library. (Loaned only under pressing needs).

The time allowed me is too brief to permit extended reference to any of these separately, but those ladies wishing for particulars are invited to read the report of the Inspector of Public Libraries for 1909, pages 369-371.

The limit to the activities of the Department of Education along these lines, is controlled by two important factors. (1) The amount of the Annual Grant voted by the Legislature; and (2) The working capacity of the Inspector and his clerical help. Notwithstanding these limitations let us see how we "line up" by comparison with our friends across the border.

I find that 25 of the states have introduced the Travelling Library system. Of these, only 14 surpass Ontario in respect to the number of volumes in circulation. On the other hand the Department of Education points with pride to the fact that it leads the states of Alabama, Connecticut, Indiana, Maine, Maryland, Missouri, Nebraska, North Dakota, Oregon, Vermont, Virginia and Washington, and is practically on a par with Colorado and Idaho.

To-day we have a total approaching 10,000 volumes in the Travelling Libraries Branch.

With a population of say 2,500,000, this Province, which embraces an area of over 261,000 square miles, supplies—allowing three readers for each book—30,000 rural readers annually, at a cost to each reader of less than two-thirds of a cent per volume. This is based on the freight charges one way, on each case of books, which is paid by the recipients. The return charges are paid by the Department. In many of the states the borrowers pay the charges both to and fro, together with an annual fee, as high as $12 in more than one instance. No such charge is exacted in Ontario.

In Indiana and Alabama, with a joint population of 4,345,000, almost double that of Ontario, but with a total area of less than 90,000 square miles compared with Ontario's 261,000 square miles. they have jointly fewer books in their Travelling Libraries than we.

Maryland and Nebraska, with a joint population of nearly 3,000,000 or one-sixth more than this Province, but with a joint area of less than 90,000 square miles, also have fewer books in circulation than have we.

The Travelling Libraries in Connecticut and Missouri, whose united population is 4,000,000 or one-third greater than that of Ontario, but with a joint territory of only 77,000 square miles, less than one-sixth of the area of this Province to serve, contain only 8,400 books.

I find these figures upon which my calculations are reached in the Year Book of the League of Library Commissions of the United States for 1910, and present them not for the purpose of minimizing the efforts and progress made by our neighbors, which is beyond praise, but to show that our own Province, blessed yet handicapped with an area greater by 10,000 square miles than that of all the last six states referred to, is surely keeping up with the procession. As a reason, however, that we must keep hustling, it is both proper and fair that I should on the other hand refer to the State of Ohio, which with a population of over 4,000,000, has 50,000 books serving a compact constituency of only 41,000 square miles.

But in Ontario's further favor it should be said that while I am basing my figures on her estimated population for 1910, I am, in the case of the United States, calculating on the population census taken in 1900, ten years ago.

Of all the states "making good" in this direction, Wisconsin probably takes the lead. In May of this year her Travelling Libraries reached a grand total of 944, containing 44,527 volumes of all classes and written in many tongues. It

is my pleasure to point out to you in probable explanation of the fact of Wisconsin's progress that the Chief of its Department of Travelling Libraries is a *woman,* Miss L. E. Stearns.

The State of New York holds an exceptional position. It has over 90,000 books in its Travelling Libraries, serving a population of about 8,000,000, crammed into an area, however, only one-fifth of the size of Ontario. This means about 1,800 libraries serving say nearly 300,000 readers, or about four per cent of its inhabitants. We supply but one and one-fifth, or less than two per cent of our population in a similar way. But then in Ontario we have no Travelling Libraries donated by wealthy sympathizers, as is the case in many of the states of the Union. As an additional offset to this, in respect to the apparent disproportion in our Travelling Libraries, I ask you to remember that while the State of New York with its enormous wealth has only *one* public library for every 25,000 of its population, Ontario provides a public library for every 6,000 of its people, and while New York State gives at most $100 as an annual grant to any one *free* library, the Legislature of Ontario, under certain conditions, and with greater generosity may pay a maximum of $260.

One word as to matters nearer home. Within the last two years the Department of Education has loaned 95 Travelling Libraries to various Women's Institutes. The place called "Aspdin" holds the record. It has had five libraries, a fact that Mrs. Joseph Clark, if present, can verify.

The Minister of Education is anxious to do more for you, and the inspector hopes to supply you with more and a greater variety of books on Domestic Science, and the useful arts. A letter addressed to myself will bring a blank form of application.

We have about two hundred travelling libraries. It is obvious we cannot supply the wants of all your Institutes, of which, I understand, there are six hundred. The principle that governs is to supply those communities remote from a free library, or to supplement the limited stock of books in the smaller association libraries, of which there are 240 out of 430 of all classes of public libraries in the Province. The Travelling Library is the advance guard of the free library that must surely follow. I am already in receipt of many letters from Women's Institute officers asking for the procedure in organizing and establishing a Public Library.

We look to you for your valuable co-operation.

In closing, let me tell you that our Travelling Libraries are bringing sunshine into the farthest corners of the land. With the active aid of Miss Black, Librarian of Fort William, eight libraries have recently been shipped into the Thunder Bay country for the use of pioneer, lumber-jack and camp follower, where they are tracking in rotation in each other's footsteps, each library serving the same eight settlements.

Will not one of you ladies write "The Romance of a Travelling Library?" Depict its wanderings; the readers that have become its friends; its vicissitudes; its influences; the happy hours it has conferred on all sorts and conditions of men and women, boys and girls; the stiring story of many a strong example it has set; of the tender consolation and cheer it has extended to some afflicted reader; the practical knowledge it has imparted to the manual workers; of the "situations" of which it must have been a silent witness; the entertainment not only that its pages have offered, but the story of its achievements from the point of view of the books themselves—the books as mute observers but graphic recorders.

Personally, I learned long since how to appreciate a page of print, for I have spent many lonely months in sub-Arctic regions remote from my fellows, where books were as scarce as orange blossoms.

In conclusion, with an apology for this disconnected talk, but with appreciation of your patience, will you, in the words of Mrs. Edward Porter, of Wisconsin --adapted for this occasion—join me in a toast?

"Here's to our Travelling Libraries;
The promoters of civilization;
The makers of true homes
The moral uplifters of communities;
The benefactors of our schools;
True missionaries in the homes of the isolated;
Co-operators with the Public School;
Destined one day to become one of the most
powerful educational influences in
the Province of Ontario."

DEPARTMENT OF EDUCATION, ONTARIO.

APPLICATION FOR TRAVELLING LIBRARY—WOMEN'S INSTITUTES.

To the Minister of Education, Toronto:

The Board of Management of the ..... Women's Institute hereby petition the Minister of Education for a Travelling Library, to be loaned on the following conditions:

It is expressly agreed that the books and cases loaned by the Minister of Education in response to this application shall be carefully handled, and shall be loaned without cost to borrowers, or without other cost than a nominal fee to defray expenses, and that the same shall be returned to the Department of Education within a period of three months, unless permission for a longer retention of the same shall be asked and given, and that the books and cases shall be returned in as good condition as when borrowed, ordinary wear excepted, and the said Board of Management also agrees to pay transportation charges from the Education Department or from the Public Library, or from wherever the Travelling Library may be shipped (but the charges for returning the books to Toronto are to be paid by the Department), and to pay promptly to the Department of Education for loss of or all damages to books or cases not occasioned by ordinary wear and use.

The Library should be forwarded to ..... Express Office.

Chairman .....
Address .....
Secretary .....
Address .....
Treasurer .....
Address .....

In signing give Christian name, and state whether Mrs. or Miss.

RULES FOR CIRCULATION:

Books lent to a Public Library or Reading Camp or Women's Institute may be circulated in accordance with its rules, provided that no charge is made for the use of books.

(1) PLACE AND TIME. The Library shall be kept at a convenient place and be open for delivering and returning books at such times as the trustee or officer in charge shall direct, not less than one hour on each of three days in each week, of which due public notice shall be given.

(2) READERS. After signing the agreement any resident of the locality over 12 years of age may draw books as long as he or she complies with the rules.

AGREEMENT.

Being a resident of ..... over 12 years of age, I hereby agree, as a borrower from the Ontario Travelling Libraries, to pay promptly any fines due from me for over detention of books, or for injuries of any kind beyond reasonable wear to any book while it is charged to me.

Persons less than 12 years of age, or those residing outside the locality to which the Library is lent, shall be entitled to the same privileges when their agreements are endorsed by the trustee, or, in the case of Women's Institutes, at the direction of the responsible officer.

(3) Books. One volume may be drawn by each reader and kept two weeks.

(4) Fines. A fine of one cent a day shall be paid for each book kept over time, and any money thus received shall be used under direction of the trustee or officer responsible for Library expenses. No book shall be lent to anyone to whom a book or an unpaid fine is charged.

(5) Reserves. A reader wishing a book not on the shelves at the time of application may have it reserved at least 48 hours after its return, by giving notice to the librarian or custodian of the books.

(6) Renewal. A reader returning a book which is not reserved may renew it for two weeks.

(7) Injuries. Notes, corrections of the press, or marks of any kind on books belonging to the Province are unconditionally forbidden, and all losses or injuries beyond reasonable wear, however caused, must be promptly adjusted to the satisfaction of the trustees or other officers responsible, by the person to whom the book is charged.

TRAVELLING LIBRARY — SPECIAL.

For Women's Institutes.

Case No. 155.

Fiction.

1. Kirby, William. Golden dog. Illus. Montreal News Co., 1903, $1.00.
2. Hichens, Robert. Barbary sheep. Illus. N. Y., Harper, 1907, $1.25.
3. O'Higgins, Harvey J. Don-a-dreams. N. Y., Century Co., 1906, $1.25.
4. Crawford, F. Marion. Mr. Isaacs. London, Macmillan, 1905, $1.00.
5. Sinclair, Upton. Moneychangers. Toronto, McLeod, 1908, $1.00.
6. Mason, Caroline A. Binding of the strong. Illus. Toronto, Revell, 1908, $1.00.
7. Sinclair, May. Tysons. Illus. N.Y., Grosset, 1906, $1.25.
8. Mason, A. E. W. Running water. Illus. Toronto, Briggs, 1907, $1.25.
9. Macvane, Edith. Duchess of dreams, Illus. Phila., Lippincott, 1908, $1.25.
10. Bronson, Edgar B. Reminiscences of a ranchman. Toronto, Musson, 1908, $1.25.
11. Boldrewood, Rolf. Colonial reformer. London, Macmillan, 1895, $1.00.
12. Scott, (Sir) Walter. Old mortality. Illus. Boston, Standard Pub. Co., Rob Roy edition, 1899, $1.25.
13. Scott, (Sir) Walter. Pirate. Illus. Boston, Standard Pub. Co. Rob Roy edition, 1899, $1.25.
14. Scott, (Sir) Walter. Anne of Gierstein. Illus. Boston, Standard Pub. Co., Rob Roy edition, 1899, $1.25.
15. Hawthorne, Nathaniel. Scarlet letter. N.Y., Dutton, 25c.

Religion.

16. Parkhurst, Charles H. Little lower than the angels. Toronto, Revell, 1908, $1.25.

Comprises seventeen sermons, of which the dominant aim is to exhibit man as God meant him to be, and show that human inherent dignity is the greatest incentive to a worthy life.

Sociology.—*Law.*

17. Train, Arthur. True stories of crime. Illus. Toronto, McLeod, 1908, $1.00.

True records of some of the most notable crimes of the last few years, and of men who lived and schemed, sinned and suffered.

SOCIOLOGY.—*Education.*

18. Malleson, Frank (Mrs.) Early training of children. Boston, Heath, 1898, 75c.
Clever practical instruction on how "to train up a child in the way he should grow." Infant life; nursery management; employment; how to instil reverence, truth, love and duty, and when to reward and punish.

NATURAL SCIENCE.—*Physics.*

19. Houston, Edwin J. Wonder book of light. Illus. N.Y., Stokes, 1908, $1.40.
A fascinating book describing the marvels of nature, reflection and refraction, looking-glasses and burning-glasses, spectrums, X-rays, ghosts, etc., etc.

NATURAL SCIENCE.—*Botany.*

20. Harwood, William S., New creation in plant life. Illus. N.Y., Grosset, 1907, 50c.
To the superficial observer a simple record of the development of variations in plant life, but to the thoughtful a book of marvellous revelations—of miracles—the extraordinary achievements of a tireless experimentalist—Luther Burbank—a wizard in respect to new creations in trees, fruits, vegetables and flowers.

USEFUL ARTS.—*Medicine.*

21. Hogan, Louise E. How to feed children. Phila., Lippincott, 1906, $1.00.
An instructive manual for mothers, wives and physicians, describing the various foods suitable for varying conditions among children, their preparation, etc., travelling outfits and precautions.

22. Spargo, John. Common sense of the milk question. Illus. Toronto, Macmillan, 1908, $1.50.
By the man who wrote "The bitter cry of the children," an adherent of the "clean milk school," versus "Pasteurization a makeshift." Deals with the politico-social aspect of the milk problem in a manner understandable by the average citizen.

23. Hough, Theodore and Sedgwick. Human mechanism. Illus. Boston, Ginn, 1906, $2.00.
A timely text-book on human physiology, hygiene, and the sanitation of the surroundings of the human mechanism. A practical aid towards establishing the health and efficiency of the human body, the keynote being the *right conduct of the physical life.*

USEFUL ARTS.—*Engineering.*

24. Waring, George E., Jr. How to drain a house. Illus. Nostrand, 1902, $1.25.
Recognizing that drainage, next to a pure water supply, is the most important factor in the reduction of the death-rate, this useful little book has been written "especially for the guidance of the woman of the house." Neglect is danger.

USEFUL ARTS.—*Agriculture.*

25. Massey, W. F. Practical farming. Toronto, Musson. 1907, $1.25.
A plain book on treatment of the soil and crop production; especially designed for the every-day use of farmers and agricultural students—with a chapter on manures and commercial fertilizers, and 20 pages of useful tables for constant reference.

26. Woll, F. W. Handbook for farmers and dairymen. Illus. N.Y., Wiley, 1908, $1.50.
A comprehensive compendium of useful information on farm and dairy topics, with tables, formulas and statistics, arranged for reference, with a valuable chapter on *practical forestry for farmers.*

27. McKay, G. L., and Larsen, C. Principles and practice of butter-making. Illus. N.Y. Wiley, 1908, $1.50.
An admirable treatise on the chemical and physical properties of milk and its components; the handling of milk and cream and the manufacture of butter—the science of dairying, with statistics, tables and numerous illustrations.

28. Green, Samuel B. Vegetable gardening. Illus. St. Paul, Webb Pub. Co., 1908, $1.25.
A manual on the growing of vegetables for home use and marketing, primarily intended for students of the Minnesota high school grade.

29. Sanderson, E. Dwight. Insects injurious to staple crops. Illus. N.Y., Wiley, 1908, $1.25.
Treating in a comprehensive, but non-technical way of the life history, habits and remedies of each insect-pest to be combated, and the general methods of farm practice to be followed.

30. Chittenden, F. H. Insects injurious to vegetables. Illus. N.Y., Orange Judd, 1907, $1.25.

Showing how the annual 20 per cent. losa on vegetable crops by insect attack can be controlled by simple systematic methods.

31 Clark, George H., and Fletcher, James, Farm weeds of Canada. Illus. Ottawa, Department of Agriculture, 1906.

A special and most valuable bulletin on the farm weeds of Canada, published by the Government in view of the incalculable losses annually sustained by the farmers through noxious weeds, to eradicate which has become a serious problem. Life-like illustrations in color by Norman Criddle.

USEFUL ARTS.—*Domestic Economy.*

32. Richards, Ellen H. (Ed.) Rumford Kitchen leaflets. Illus. Bost., Whitcomb, 1904. $1.25.

Some plain words about foods. Twenty chaptera by various authorities on subjects directly connected with the selection and preparation of food. Showing the relative values of certain products, and the relation of the kitchen to man, woman and child.

33. Rorer, S. T. (Mrs.) Canning and preserving. Phila., Arnold, 1887, 50c.

Presented as a remedy of the evil of adulteration which it is claimed is practised by the factories, showing how the simple operation of preserving and canning pure food is within the reach of every household.

34. Abel, Mary H., Sanitary and economic cooking. Rochester. Am. Pub. Health Asso., 1898, 65c.

The $500.00 first prize essay in the "Lomb," Rochester competition, 1888, on cooking adapted to persons of moderate and small means, illustrating "five food principles by practical recipes" under the auspices of the American Public Health Association.

35. Balderston, L. Ray, and Limerick, M. C. Laundry manual. Phila., Balderston and Limerick, 1906, 65c.

A small book of practical instruction in laundry work, with cuts of soap and other recipes and preparations for removing stains, general processes of washing, and how to equip a home laundry.

36. Broughton, J. (Mrs.) Practical dress-making. Illus. Toronto, Macmillan, 1907, 65c.

An up-to-date manual suitable for students and technical classes—containing complete instructions in cutting, making, drafting and fitting, fastening, etc., with notes on materials, form and color, and illustrated by 53 diagrams.

FINE ART.—*House Decoration.*

37. Wheeler, Candace. Principles of home decoration. Illus. N.Y., Doubleday, 1908, $1.75.

A book of practical suggestions, with practical examples, showing that many houses, large and small, now vulgarized by uneducated experiments, could be made beautiful by simple though artistic interior decoration, with examples.

38. Brown, Norman. House decorating. Illus. London, Scott, Greenwood, 1900, 45c.

A manual for the beginner professionally engaged in house painting and decorating and also for those who wish to learn. Tools and appliances, colour application, graining, gilding, sign-painting and intenal decoration, with examples.

LITERATURE.—*Poetry.*

39. Kipling, Rudyard. Seven seas. Toronto, Musson, $1.00.

The "Seven Seas" and some of the Barrack-Room ballads. Colonial library series.

40. Kipling, Rudyard. Barrack-room ballads. Toronto, Musson, $1.00.

A new edition of the famous Barrack-Room ballads, with some added "verses."

HISTORY.—*Description and Travel.*

41. Machar, Agnes M. Story of old Kingston. Illus. Toronto, Musson, 1908, $1.25.

A voluminous and interesting history of Kingston, Ontario—"old Kingston," intimately associated with the achievements of the early adventurers and pioneers of the colony of Canada, from the founding of Fort Frontenac, July, 1673, by the French viceroy to the present time.

HISTORY.—*Biography.*

42. Keller, Helen. World I live In. Illus. N.Y., Century Co., 1908, $1.25.

A group of 14 essaya and the poem "The Chant of Darkness." A volume of extreme interest, the remarkable and brilliant production of a deaf-blind woman, who has shown how rarely rich is her world with three senses—touch, taste and smell.

HISTORY—*Modern.*

43. Spence, Nettie. Canadian history. Toronto, Musson, 1897, 25c.

Some topical studies, first in outline then in detail, covering the work prescribed for primary, leaving and matriculation examinations in Ontario, 1897.

JUVENILE.—*Fiction.*

44. Strang, Herbert. Humphrey Bold. Illus. Toronto, Frowde, 1909, $1.25.

The chances and mischances by land and sea of a sailor lad who served with Admiral Benbow in the time of King George.

45. Brooks, Edward (Dr.) Wonder stories from the Mabinogion. Illus. Phil., Pen. Pub. Co., 1908, $1.00.

Splendid stories of magic and enchantment, heroic adventure and supernatural incident gathered from the legends of Wales; *Mabinogion*, freely rendered, meaning "tales for youth."

46. McNeil, Everett. Boy Forty Niners. Illus. N.Y., McClure, 1908, $1.25.

A stirring tale of adventure, describing the perils and hardships endured by Ray and Arthur, two Ohio waifs, who crossed the American desert and the Sierra Nevada mountains in a "prairie schooner" to the gold mines of California in 1849.

47. Crockett, S. R. Sir Toady Lion. Illus., N.Y., Stokes, 1897, 60c.

Relates the surprising adventures of Sir Toady Lion, with those of General Napoleon Smith. An improving history for old boys, young boys, good boys, bad boys, cowboys, etc.

48. Hyrst, H. W. C. Adventures in the great deserts. Illus. London, Seeley, 1907.

A record of romantic incidents and perils of travel, sport and exploration throughout the world—the experiences of twenty-four travellers and explorers in the desert places of the world.

49. Wade, Mary H. Our little Jewish cousin. Illus. Bost., Page, 1906.

An interesting account of the manners and customs of the black-eyed children of this wandering race; life in Palestine and Jerusalem.

50. Pike, H. Lee M. Our little Panama cousin. Illus. Bost., Page, 1906, 50c.

A short history of Panama, where the great transcontinental canal is being dug by the American government, and the adventures of young Vasco Barretas and his friends.

51. Wade, Mary H. Our little Philippine cousin. Illus. Bost., Page, 1906, 50c.

The story of little Alila of Luzon, one of the brown children of the Philippine islands—a ward of the United States.

52. Headland, Isaac T. Our little Chinese cousin. Illus. Bost., Page, 1907.

A faithful story of child life in China, in which the sports and pastimes and customs of Miss Chenchu and Master Yüshan are faithfully described.

53. White, Jennie R., and Smith, Adelaide. South Africa to-day. Illus. Chicago, Flanagan, 1907, 50c.

Short account of a short trip from England to and through the South African states of to-day.

JUVENILE.—*Miscellaneous.*

54. Cowles, Julia D. Stories to tell. Chic., Flanagan, 1906, 35c.

Including stories for reproduction and dramatization in the school-room, in answer to the universal appeal, "please tell me a story."

55. Dickens, Charles. Paul Dombey. Boston. Ed. Pub. Co., 1906, 35c.

The tale of Dombey and Son, one of the "Master's" most famous novels, shortened and adapted for little readers.

56. de la Rame, Louise. Child of Urbino. Illus. Bost., Ed. Pub. Co., 25c.

The life story of Raphael Sanzio, a child of Italy, who became famous as one of the greatest artists of all time.

57. Longmans' Domestic economy reader. Illus. London, Longmans, 1900, 30c.

A little book of "object lessons" for the very young, the A B C of domestic science—profusely illustrated.

JUVENILE.—*Biography.*

58. Nursey, Walter R. The Story of Isaac Brock. Illus. Canadian Hero Series. Toronto, Briggs, 85c.

Published under the auspices of the Ontario Library Association. Colored illustrations from original paintings by Canadian artists. A charmingly written book. The story is told in graphic language and depicts the campaign of 1812 with fidelity. Should be read by every boy and girl in Canada.

SAMPLE CASE.

TRAVELLING LIBRARY. Case No. 166. ORDINARY. Fixed Collection.

Title.	Author.	Publisher.	Price.
Fiction:			$ c.
1. Prisoner of Zenda	Hope, Anthony	Grossett & Dunlop	0 75
2. The Climber	Benson, E. F.	Doubleday Page	1 25
3. Mill-lass of Ilderleigh	Escott, Inman H.	F. Warner & Co.	1 00
4. Crested Seas	Connolly, J. B.	Chas. Scribners	1 50
5. Comrades Two	Fremantle, E.	Musson & Co.	1 00
6. Bridge Builders	Fay, A. C.	Musson & Co.	1 25
7. The Girl with the Red Hair	Pemberton, M.	Cassell & Co.	1 25
8. Kilmeny of the Orchard	Montgomery, L. M.	L. C. Page	1 30
9. Calling of Dan Mathews	Wright, H. B.	McLeod & Allen	1 50
10. Queen Sheba's Ring	Haggard, H. R.	Copp, Clark & Co.	1 25
Usefnl Arts (Medicine):			
11. Body at Work	Jewett, F. G.	Ginn & Co.	1 25
Philosophy:			
12. He Can Who Thinks He Can	Marden	Crowell, Thos. Y.	1 00
Sociology:			
13. Problems of To-day	Carnegie, A.	Allen, Geo.	0 60
14. Education and Indnstrial Evolution	Carlton, F. T.	Macmillan & Co.	1 00
15. Improvement of Towns and Cities	Robinson, C. M.	Putnam's & Sons	1 25
Natural Science:			
16. Popular Electricity	Hebbert, W.	Cassell & Co.	1 00
17. Practical Talks by an Astronomer	Jacoby, H.	Chas. Scribners	1 00
18. Wilderness Homes	Kemp, Oliver	Musson	1 00
19. Water Wonders	Thompson, J. M.	Doubleday Page	0 60
20. Curiosities of Natural History	Buckland, F. T.	Methuen & Co.	0 75
Description and Travel:			
21. The Congo and Coasts of Africa	Davis, R. H.	Chas. Scribners	1 50
22. Little Journeys to Norway and Sweden	George, M. M.	A. Flanagan & Co.	0 75
23. Peeps at Many Lands—Morocco	Finnemore, J.	A. & C. Black	0 75
24. An English Honeymoon	Wherton, A. H.	Lippincott, J. B.	....
25. Viva Mexico	Flandran, C. M.	D. Appleton	1 00
26. The Struggle for Imperial Unity	Denison, G. T.	Macmillan & Co.	1 75
27. History of the Union Jack	Cumberland, B.	Wm. Briggs	1 25
JUVENILE.			
Fiction:			
28. Hendrick the Hunter	Kingston, W. H. G.	Henry Froude, Hodder & Stoughton	0 75
29. Helen Grant, Graduate	Douglas, A. M.	Lothrop, Lee, Shepard & Co.	1 00
30. Ten to Seventeen	Bacon, J. D.	Harper	1 25
31. Old Indian Days	Eastman, C. A.	McClure & Co.	1 25
Fine Arts:			
32. Water Colors	Bradley, M.	Milton Bradley	0 25
Poetry:			
33. Longfellow, H. W.		Crowell, Ty.	1 00
Useful Arts:			
34. Outdoor Handy Book	Beard, D. C.	Chas. Scribners	1 50
Religion: (Juvenile)			
35. Missionary Heroes in Asia	Lambert, John C.	Seeley & Co.	0 75
36. Stories from The Life of Christ	Kelman, J. H.	T. C. & E. C. Jack	0 25
Biography:			
37. Book of Golden Deeds	Yonge, C. M.	Dent & Co.	0 25
38. Story of Captain Cook	Lang, John	T. C. & E. C. Jack	0 35
39. Story of Isaac Brock	Nursey, W. R.	Wm. Briggs	0 85

SAMPLE CASE.

TRAVELLING LIBRARY. Case No. 109.

WOMEN'S INSTITUTE. Fixed Collection.

Title.	Author.	Publisher.	Price.
Fiction:			$ c.
1. The Chaperon	Williamson, C. N. & A. M.	Musson & Co.	1 25
2. Old Rose and Silver	Reed, Myrtle	Putnam's & Sons	1 50
3. Anne of Green Gables	Montgomery, L. M.	Page, L. C. & Co.	1 25
4. Janey Cannuck in the West	Ferguson, Emily	Cassell & Co.	1 25
5. The Old Loyalist	Davis, A. R.	Wm. Briggs	1 50
6. The Greatest Wish in the World	Thirston, E. T.	Musson & Co.	1 25
7. The Men of the Mountain	Crockett, S. R.	Wm. Briggs	1 25
8. Kenilworth	Scott, Sir Walter	Macmillan & Co.	1 50
9. Spinster Farm	Winslon, Helen M.	Page & Co.	1 00
10. Freebooters of the Wilderness	Laut, Agnes C.	Musson & Co.	1 25
Agriculture:			
11. Questions and Answers on Butter Making	Publow, Chas. A.	Orange Judd Co.	0 75
12. Science and Practice of Cheese Making	Van Slyke, L. L. and Publow, Chas. A.	Orange Judd Co.	1 50
13. Business of Dairying	Lane, Clarence B.	Orange Judd Co.	1 50
14. Canadian Dairying	Dean, Henry H.	Wm. Briggs	1 25
15. Types and Breeds of Farm Animals	Plumb, Chas. S.	Ginn & Co.	2 00
16. Profits in Poultry	No author	Orange Judd Co.	1 50
17. Hive and Honey Bee	Dadent, Chas.	Dadant & Co.	1 75
18. Insects Injurious to Fruits	Saunders, Wm.	Lippincott & Co.	1 75
19. Principles of Fruit Growing	Bailey, L. H.	Macmillan & Co.	1 75
20. Book of Wheat	Dondlinger, P. T.	Orange Judd Co.	1 25
21. The Potato	Fraser, Samuel	Orange Judd Co.	0 75
Domestic Economy:			
22. Food and Its Functions	Knight, Jas.	Blackie & Sons	1 25
23. Boston Cooking School Cook Book	Farmer, F. M.	Musson & Co.	1 50
24. Rumford Kitchen	Richards, Ellen H.	Whitcombe & Berrows	1 00
25. Bread and Breadmaking	Rorer, Mrs. S. T.	Arnold & Co.	0 50
26. Art and Practice of Laundry Work	Rankin, M. C.	Blackie & Sons	1 00
27. Practical Dressmaking	Broughton, Mrs. J.	Macmillan & Co.	0 75
Philosophy:			
28. Control of Body and Mind	Jewett, F. G.	Ginn & Co	1 25
29. Home Nursing	Harrison, E.	Macmillan & Co.	1 00
Sociology:			
30. Practical Etiquette	N. C.	A. Flanagan	0 75
31. Bitter Cry of the Children	Spargo, John	Macmillan & Co.	1 50
32. Stories to Tell to Children	Bryant, Sara C	Houghton Mifflin	0 50
Religion:			
33. Daily Help for Daily Duty	Reeves, Chas	S. W. Partridge	0 75
34. Gospel in Action	Ingram, A. F. W.	Well Gardner, Derton	1 00
Juvenile:			
35. Randy's Winter	Brooks, Amy	Lothrop, Lee & Shepard.	0 75
36. Tree Stories	Mulets, L. E.	L. C. Page & Co.	0 60
Description and Travel:			
37. Peeps at Many Lands—India,	Finnemcre, J.	A. & C. Black	0 50
38. Peeps at Many Lands—Burma	Kelly, R. T.	A. & C. Black	0 50
Biography:			
39. Story of Isaac Brock	Nursey, Walter R.	Wm. Briggs	0 85

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Dr. Helen MacMurchy, Toronto.

I am so glad to meet the Women's Institute again, and I am so glad to meet you here. I hope you all feel at home. You should, because this is your own University, and I suppose among all the delegates here this morning, from the length and breadth of the Province, there is hardly one who does not remember, as she sits here, a son, or daughter, or husband, or father, or brother, who was a graduate, perhaps a distinguished graduate, of this University. You should feel at home, because from the walls of Convocation Hall there look down on you the faces of those who, in the past, were very much interested in such progressive movements as the one the Women's Institute represents.

On the right is President Sir Daniel Wilson, a former President of this University, who was so interested in the higher education of women, that he himself, without fee, in connection with a committee of ladies, organized before the University was opened to women—away back in the sixties—some lectures for the higher education of women in the Mechanics' Institute of this city, which is now the Public Library. President Sir Daniel Wilson, although a Scotsman, was one of the best Canadians, and he and Dr. McCaul, whose portrait is on the left, were deeply interested in the progress of this Province, and did very much for it. I hope some of the ladies may find an opportunity before leaving to enter the University Library, and there they will see the portrait of one who was, perhaps, the wisest and certainly one of the most influential who ever taught in the University—Professor George Paxton Young—and I am reminded that he was once an inspector of Public Schools in this Province, and was a great help to the Education Department. Dr. McCaul, the first President of the University, was a man that has left his mark forever upon this institution, not only by the eloquence for which the Irish nation is distinguished, but by the deep interest which he took in the young men that came to the University. Those who knew him think still upon the interest he took in anything that was for the betterment of the people, and know that to this day he, being dead, yet speaketh. Of his eloquence there is but one instance at hand, and that is cut in stone on the monument that you may see from the door of Convocation Hall, erected to those who died in the Fenian Raid. If you look at the western face of that monument you will see these words, "Canada erected this monument as a memorial to her brave sons, the volunteers who fell at Lime Ridge, or died from wounds received in action, or from disease contracted while defending her frontier, June, 1866." Those simple, yet eloquent words, were the words of this man whose face looks down upon us to-day, and although it is a simple monument, the record means a great deal to the history of this country.

This University has now for the second time given hospitality to a gathering of distinguished women. The first was the International Council of Women, which met here over a year ago, and the second is your own, and I hope you will often come back to these buildings, and you will come back because it is your home. It is the University of the Province of Ontario.

One can hardly draw a hard and fast line and say, "Here education ends and there life begins."

The subject that I have to speak to you on—"The Medical Inspection of School Children"—is one that is intimately connected with education. There are a great many reasons for thinking that the world is growing better. It does seem that the gold of the Golden Rule begins to shine out from among the dross of his-

tory. It does seem that it strikes people occasionally that it *is* better to give than to receive. If I were asked to prove it I think I would take the history of education in this Province. It was in the year 1797 that the first Legislature of this Province met. It was not in Toronto, because Toronto was not then the capital. It met at Newark, or Niagara, and one of the first measures was a measure in regard to public education in the Province. It seems to me that is a very interesting fact. It is interesting in the first place, because it was such a progressive measure for that time. It was so advanced for that time. When you consider it was the year 1797, and remember that England, which really leads the world in matters of public education, did not pass an Act for the general education of the children of the country, until the year 1870, one feels almost amazed at the progressive character of our first legislature.

In the city of Manchester inquiry was made as to the number of illiterates and they set to work to find out how many of the fathers and mothers could read and write. As a result of that inquiry, it was found that one-half of the mothers and one-third of the fathers in the city of Manchester, about the year 1866, could not read or write. You know what a great change there is in those matters now, and you see by the adoption of public education about the year 1870, in the Old Country, what an immense advantage was given to the children of the people.

Ontario has made great progress in recent years. It is delightful to pass through this prosperous Province and see the farm homes with their brick walls and their air of comfort. It is fine to see the barns which can hardly hold the harvests that have been vouchsafed to us by the goodness of Almighty God. When you see the gasoline engines and automobiles, and the beautiful horses and the fine stock, and all these things, one can only pray that we may be able to make the best use of these gifts. I never look at such a farm home, but I seem to see someone else flitting around the house, looking over the fields. I seem to see the spirit of the first farmer's wife who lived on that farm. There is many a farm in the Province of Ontario that some lady here left the day before yesterday, which has been in her own family one hundred years. Happy you to have such a history behind you. Each one improves it, each one lives a good life on it, and leaves it better for those who follow, but to whom is due the credit of that home and that farm and this prosperous Province? You know better than I do, and I know it well, that the prosperity of this Province has been built on the work of the pioneers. It rests on the little home that once was hewn out of the wilderness, on that log cabin, where the first family was brought up, on the little clearing where they sowed the first wheat. Great changes occur in a country, but let us stop a moment to praise these men and women to whom this Province owes so much.

Did you never hear your mother or your grandmother, or perhaps your great-grandmother—tell of the day when she met a bear at the corner of the clearing? Did you never hear her tell of how you might hear the wolves howling at night when the fire was low? Did you never see them spin wool, or dye that wool? Did you ever see them make soap? It was these people who made the foundation of education in this Province; and what I want to ask you is: Do you think, for our times, we are as advanced as they were for theirs? Do you think we are nearly one hundred years in advance of older countries in providing such education for our children? You can answer the question better than I can, but I do not think we are in advance. Are we behind?

Now that the State has undertaken to educate the children, undertaken the work of the parent, has the State, has the Province, been a success as a parent? I

think it has. I think there is no doubt that the Province has been a success as the parent. If it had not, we would all be wanting to go back and educate our own children, but we feel very well satisfied, on the whole, with our Government schools. Of course, like everything else, they can be improved. Still, there is no doubt that the schools of Ontario are a success.

Now, if the State has been a success as a parent, it has become so by doing the things that other good parents do. Let us recall what those things are.

In the first place, a good parent is absolutely just to the children. You remember how it says, "Now, Isaac loved Esau, but Rebekah loved Jacob." It should, of course, run this way, "Now, Isaac and Rebekah loved Jacob and Esau." The wise parent, the just parent, such as the State or Province tries to be, is absolutely the same to all the children. There is no question that the State has done that. The children of Ontario are all treated alike. They all have the same rights. That, so far, is one of the great principles on which our Provincial Government is based and it has been well carried out.

In the second place, parents soon discover that all the children are not alike, and then there is a third discovery that the parents make, and that is, there is nearly always some hindrance in the way of each particular child. Sometimes it is John's temper, sometimes it is the fact that Mary never is very industrious. You will think of some other hindrance. Now, the State must take notice of that, and the State must take notice of the fact that all children are not alike. If you put forty-five children into a school-room, they won't all be exactly alike, and we must adopt some plan to alter a little bit the education, so that it shall be adapted for certain children. We begin by taking the average child. But there is no such thing as the average child. The average child is a theory. But medical inspection takes hold of these last two matters, the differences between children and the hindrances to children.

As to medical inspection in rural districts and townships and counties and villages. It may perhaps be the opinion of some ladies present that medical inspection is all very well for cities, but not for rural districts. Not so, if you consider the matter thoroughly. In Scotland and England, and Germany and Japan, where medical inspection is done most and best, it is done in the rural districts as well as in the city.

What we really mean by medical inspection is letting the doctor help the teacher, calling the doctor in as a sort of auxiliary. There are some things that the doctor knows, but the teacher does not, and there are some things the doctor can do to help the teacher which nobody else can do.

I might also say that in those countries where medical inspection has been made a success, there are in the larger areas, in townships and counties, County Medical Officers of Health, and that is a something which we want in Ontario. The advantages of having County Medical Officers of Health are very great, and one advantage is that such a County Medical Officer can do much towards medical inspection of schools. I do not see that it would be so very difficult to get a doctor to visit the country schools. Usually a doctor has to drive past the school sometime in the day.

The teacher has many difficulties. Sometimes the doctor can see why the pupil is not getting on. The other day I saw in a school a girl of fourteen. The principal said to me, "Doctor, that girl is so slow." I said, "Yes, I am sure she is. But if you or I could not see any better than that poor girl does we would be just as slow." If the doctor were in the school and recognized as an ally, there are many things the doctor could do to remove hindrances to education.

Let me spend my last five minutes in speaking about the hindrances children have which a doctor can do something to remove. Children learn through the eye, through the ear, and through the hand. Medical inspection is intended to remove all possible hindrances so that children may learn more quickly.

There are three or four of these hindrances I would like to speak on. The first is defective vision. The eye is the great means of learning. It is what they see that children remember. Seeing is believing. You say, "Oh, yes, my children see well." Do they? There is about one child in ten that does not see very well. Defective sight is a hindrance to their educational progress. Canadian children no doubt are the finest in the world, but, if we find that in all other countries there is about one child out of ten who does not see as well as the rest, then we must find out about our own children. I want you to realize the imporatnce of this. Take a class of forty, there are probably three or four not seeing very well.

A business man down town said to me "I had my little boy in church the other Sunday, and he asked, 'What number is the hymn?' and the father said, 'There is the big number upon the wall, read it,' and the boy said 'I cannot read it.' This disturbed the father. He said to me 'I could not get home quick enough from church to find out.' At home he said to the boy, 'What does your teacher do with you at school if you cannot see?' The boy said, 'She lets me go to the blackboard to copy it off." The father was angry with the teacher. He said to me "Why did she not send me a post card and tell me the boy could not see well?" But probably the teacher expected the father to send her the post card.

Did you ever teach? The boy goes to school, and the teacher puts his name on the register and asks him how far he has gone in school, and he says, "Can I sit up in front to copy from the blackboard?" and she says "Yes" and that ends it. The teacher is not a doctor, you know, and I do not think it is quite fair to expect a teacher to do what a doctor has to be trained to for years and years.

The other day I had a patient come to the office. She used to go to school with me, and I felt proud to think she would come to me for advice. She told me she suffered very much from headaches, and I said, "Why, of course; you used to have dreadful headaches at school." "Yes," she said, "I have gone on suffering like that all my life." I said, "Tell me all about it," and she told me and mentioned the doctor she had consulted. "Well," I said, "you did not give that doctor a chance, or I am sure he would have mentioned what I am going to mention." She said, "No, I did not go back to him." You may be sure I was anxious to do something for this interesting patient. You can see how much it meant for me to solve this problem, because it meant so much to her. I said, "I feel sure it is your eyes. I cannot suggest any treatment until the eyes have been thoroughly examined." Then she looked at me, and I felt she was thinking how little I knew and how well she knew me. "My eyes?" she said. "Don't you remember what good eye-sight I have." So I said anxiously "Would you mind just thinking it over for a day or two?" She went away, and came back the next day, and said, "I suppose I must go to an oculist. I went home and did a piece of embroidery, and had such a shocking headache when I went to bed that I began to wonder if it was just possible you could be right." She went to the oculist, and he found out the trouble. She got a pair of glasses, and her headaches disappeared.

Are you sure our children all see well? The question you should ask is this: Not, "Are there two children out of every twenty who do not see very well?"

But, "Which two children do not see well, and what can be done to remedy it?" The doctor can tell you, and only the doctor. The teacher can perform the very easy preliminary examination to make sure the children can see well. That is an easy test, but you always need a doctor to show how that test is done and to see that it is done and see that the children's eyes are attended to.

Other hindrances to study are found in the ear and the throat, and the school doctor could in these matters do a great deal to help in the education of our children. He or she could save time, could save money, could save suffering; and the time will come when the doctor and the parent and the school nurse and the school teacher will work together for the welfare of our school-children.

ADDRESS.

Miss Mary Urie Watson.

It is my purpose to point out how the Women's Institute may inaugurate a great educational movement for the women and the girls of this Province.

The average Ontario woman knows her business of homemaking and housekeeping as well as the average farmer knows his business. In both cases there is plenty of room for improvement. The little group of Ontario women who banded together in the first Women's Institute felt the need of improvement. They set themselves to study the house problems, and the 16,000 members of today are faithfully following in their steps. Much progress has been made through the discipline of organization, and through the organizers and lecturers sent out by the Department of Agriculture and shepherded by the Superintendent; through the constant informal discussion of difficulties and exchange of method; through the labour of innumerable women who read and studied hard to prepare their admirable papers.

Now the question coming up in many Institutes is, How shall we move forward in the study of these home problems? Some are only wishing for better opportunities, but some members are saying boldly—We ought to have trained teachers who are specialists in this line going from place to place, giving a whole series of lectures on one subject in each place. And really, why not?

This idea of sending trained teachers to the girls and women in the country who cannot leave home, is worth your serious consideration. Let us think of it a little. Is such teaching worth while? This Province spends large sums of money each year in providing our farmers with accurate information about the best methods of keeping orchards healthy, raising good stock, feeding animals, draining the land, co-operating for the economic production of fresh eggs and putting them on the market, etc., all for the purpose of increasing the wealth of the farmer and the material prosperity of the country. Surely it is of equal importance to provide the women of the country with accurate information about, or guidance in the study of, *the principles* which govern the matters of keeping the home sweet and attractive, sanitation to prevent disease, feeding human beings, rearing healthy children, and co-operating for the production of a fine family life. Surely it is wise to do this, for the purpose of increasing the efficiency and social living of the family.

Is it possible to send such teaching to the country districts at a reasonable cost? I see initial difficulties, but none which seem insuperable. The work would

entail the employment of first class teachers engaged by the year, and, being arduous, would have to be well paid. The economical use of such teachers would demand careful organization in the way of equipment, courses offered, class schedules, and routes of travel. These teachers might be used in different ways, for instance,—

a. In itinerant work, by a group of adjacent Institutes, each Institute holding classes one day weekly, each Institute being provided with its own individual equipment, and the course lasting 18 weeks.

b. At central points, when a group of neighboring Institutes would unite to employ the full time of one teacher, establish her and the equipment at a central point, and send the classes to her. There seems no difficulty getting milk cans to the railroad station daily, and it should be easier to get the classes to the centre once a week. These courses should cover at least 20 weeks.

c. In charge of travelling cooking or laundry schools, when a wagon equipped with individual equipment for twelve or fifteen would be used once a week by a group of adjacent Institutes for a course of specified lessons. Each Institute would have to provide a suitable room, and cartage to the next point. This plan could be admirably carried out with a railroad car.

The plan of holding short courses of a week or fortnight with one or two lessons each day, would seem unsatisfactory, because few women could arrange for such continuous attendance and frequent transportation.

Doubtless other plans will be suggested, and it would, therefore, seem wise to carry on experimental work to test the value of the different ways.

The financial difficulty is the chief one, but is not too discouraging when we remember that, when the Women's Institutes want money for a special purpose, they usually go to work and raise it. Also the women are usually willing to pay for value received, and after the experimental stage is past these classes should be largely self-supporting. Then why should the women not claim some of Ontario's wealth from the Government. As you are aware, the Agricultural Department has provided fourteen counties with District Representatives? Most of the other counties are clamoring for them and will likely get them too. Do you know what that work in each county cost for salaries and travelling expenses and maintenance? $2,100. Do you know the average amount per county the Women's Institute work cost? An average of about $125.00. The disparity is too great when the relative importance of the two branches of work is considered. We cannot be considered unreasonable if we seek some Government assistance. That aid may shape as a fund to carry on preliminary experimental work, that might be considered in the same light as funds used for testing fruit shipments to England. When the experimental work proves valuable, as it surely will, then every individual Institute's effort to establish such teaching should be well bonused. In earlier days our Mechanics Institutes were bonused thus with good results. It might also take form in equipments for individual practical work, which could be rented by the Institutes.

The Institutes might join forces with the rural schools in this work with mutual benefit. The Education Department gives liberal grants to the schools which maintain household science classes, but not unless they employ properly qualified teachers. Rural schools cannot pay the higher salaries of Household Science teachers, and they have not yet learned to co-operate in using a special teacher.. The Women's Institute might undertake to furnish the satisfactory teacher and so earn the grants.

With the means provided, the organization should prove a fairly simple matter, since the machinery of the Institutes is ample for all purposes. Mr. James, our Deputy-Minister, speaking in Washington the other day on the subject of "The Indifferent Farmer." said: "It is difficult to get the people to support the proposition of spending money freely in teaching the indifferent farmer to drain his land." Mr. James and his Department might leave those indifferent farmers to ripen a bit and transfer their attention to harvesting a crop of extension classes amongst the women who are hungry for more instruction about their special work. We can assure them of enthusiastic support.

The Women's Institute problem is not one of indifference, but one of organizing ourselves to secure the necessary machinery and financial support to set the work going.

How shall we set about it? Let us get together a strong committee of representative Institute workers, go into the whole question thoroughly with the other interests concerned, draw up a careful plan of work with an estimate of the cost of trying it, and submit it to the Minister of Agriculture for approval and financial support. If he will not grant our request, we will simply take it back, strengthen our argument and go at it again.

If we get a chance to experiment thus and show how it can be done, it will be the start of a great movement, and I want the Women's Institute to have the glory of the missionary work.

PROCURING AND EXPENDING INSTITUTE FUNDS.

Mrs. Johnston, Agincourt.

I am very pleased to be here this afternoon to represent our branch of the Women's Institutes. Mr. Putnam asked me to give our methods of procuring funds and I was asked to represent the branch in this.

In our riding we are fortunate in having a Plowman's Association which meets once every year for the purpose of conducting a plowing match. The plowmen found it very inconvenient to get their meals, and especially so when the field chosen for the match was some distance from the village. So our Institute has been catering for them for the last four years.

We usually leave the building accommodation to be arranged for by the men, but try to have this as near the field as possible. A driving shed makes an excellent dining room and a tent adjoining answers the purpose of a workroom or kitchen.

The menu is arranged by a committee of ladies from our Institute, who always provide a bill of fare in keeping with a plowman's appetite. We also divide the baking, so that it does not fall too heavily on any one. The meat is purchased out of our funds, and a number of ladies help in the cooking. One lady is asked to cook ham, another to roast veal; each one thus has her work. We do the same with the bread, pies, etc. Everything is prepared at home, and on the morning of the plowing match each member of the Institute is supposed to be on the ground and ready for work.

We always buy a sack of peanuts, get the girls to put them into small bags, and sell them that day. We do the same with our taffy. We buy sugar and the girls make the taffy and sell it. In that way we make quite a bit of money.

We bought eight dozen knives, forks, and spoons and rent them out. There has

been a great demand for them for pic-nics, socials, raisings, etc. We charge the small sum of 10 cents a dozen, and that brings a little profit, not to speak of the advantage of having them on hand when required.

The ladies very often come to the dinner with the men, and become so interested that they soon find their way to the kitchen. They are almost invariably delighted with the way we manage things, the good things we have to eat, and decide to become members of the Institute before the next plowing match. Eight new members joined our Institute this year, simply through coming to the plowing match dinner.

Of course, you understand, undertaking this is no idle speculation; we all have to work and work willingly. We have our Motto hung in the dining-room and when we get a little foot-sore we look at the motto, take fresh life and start again. Very often we go away feeling better than when we went, and I think that the men, as well as the women, are beginning to believe that the Women's Institute is one of the best organizations we have.

I might make mention that the town band furnishes music while meals are being served, which makes it very pleasant.

This year we gave about five hundred meals. That is as near as we could estimate.

We thought we would have a little change this year, so we decided to have a concert in October, under the auspices of the Women's Institute. The Women rented the hall, decorated it, and procured high class talent. The young girls acted as ushers, and altogether the concert was a grand success. It was a record breaker for a country concert.

THE CHAIRMAN: You have heard how they make money in their local Institute in East York. We see that money making is not without labour. There is work to be done, and this idea of hanging up a motto seems to me a good one. If we can get a motto sufficiently inspiring that it will take the blisters off your feet and make us more willing, well, we had better all have one in our homes.

This subject of money making for the Women's Institute is a very important one, because the money that we make in this Institute and through the work of the Institute is not money made for selfish purposes. The money made in the Institute is spent in some public improvement. In some districts they are improving their town; they are improving the cemeteries. In other districts they are improving the sidewalks, and I had the pleasure last summer of being in a town where most of the cement walks were put down by the Women's Institute. Every member of that Institute was benefited by it, and that is the way we are supposed to spend the money. You remember Dr. MacMurchy speaking of the pioneers and the great work they had done, and that we were reaping the benefit of it. The great thing about work is, we may think we are working for ourselves, but work as we may, those to come will get more benefit from it than we ever can ourselves, because the nature of good work is that the future may benefit from it. All the great work that has ever been done by great artists, by great educationists, by great scientists, or any other work, has resulted in future generations reaping the benefit; and although we may think we are working for ourselves, we cannot work for ourselves because we must work for the future, and the more selfish our work is the less will we get from it. There is satisfaction in thinking that the good we do goes on, and not only the good goes on but the evil. The work we do should be good work, and our money should be expended in such a way that we to-day get benefit and future generations benefit also.

ADDRESS.

The Bloomfield Representative.

It seems to me, since having heard other representatives of the Institute, that any remarks I might make along this line will be rather superfluous. Although they have not all spoken along the line of procuring funds, still I have gleaned from what they said that they have been successful financially.

We in our branch, I think, scarcely realized that we had been successful from a financial standpoint, as any measure that we have used was not taken as a means to that end.

Our first aid in procuring funds has been the proceeds from rather a large membership. We were organized three years ago and in that three years we have had on an average an attendance of about fifty members. Now, doubtless that does not sound much to a great many of you, but, when you consider that we are in a village of about six hundred inhabitants and that within a radius of six or seven miles there are five very thriving institutes, we feel that is a fairly good attendance. Then of course we have our grant which we must not forget. As I said before, any measure that we may have used was not altogether directed towards financial progress, but rather to keep our organization before the public.

Each winter we have held a concert, which netted us good receipts, and you will all understand how a concert of that kind would be arranged for; simply by appointing a committee whch takes care of all arrangements, and it always seems quite simple. These concerts are given by local talent. If we should be fortunate enough to have some one visit us in the village who would be willing to help us, all the better, but we try to be under no expense for our talent; consequently, our expenses are restricted mainly to the rent of a hall in which to hold the concert,

Again, at one of our picnics we held a sale. Articles sold at this sale were donated by the members, and wrapped in such a way as to conceal their identity. Some one might get a thimble, and it would be wrapped in a box a great deal bigger than was really necessary. I hope you ladies will not think that we engage in games of chance. That was merely an expedient. These articles were auctioned off by one of the ladies who was rather witty, and she succeeded in getting good prices.

Our latest expenditure has been the purchase of a vacuum cleaner, the cost of which was $25. This we rent by the day to non-members at the rate of $1 a day, to members at 75 cents. We also rent it for half a day, and hope to rent it, especially during the winter months, by the hour, as some might wish to clean just a living room.

These are the means we have used in our Institute, and we realize we are not doing anything to make money, so much as to keep interest before the public. We have to compete with a ladies' club and a number of church societies and some of the members of this club belong to our Institute. We hope in the future to make progress financially in any way which will further the Institute and so help the other Institutes with their work.

ADDRESS.

MRS. SPEIGHT, MARKHAM.

At the annual meeting held in May the Secretary's report showed seventy-two members on the roll, an increase of thirty-two over the previous year. This year we hope for still more. Eleven meetings were held with an average attendance of fifty-one. The receipts for the year were $70.48.

Money-making has not been the object of the Institute. The idea that we should be interested in our fellow-citizens is much more evident than when these meetings commenced.

Three dollars of the funds have been expended the last two years for printed programmes, which have been found to be most beneficial.

When the ladies are sure that a good programme is being prepared, they are much more likely to attend. We have had excellent music and elocution, as well as interesting and instructive papers.

One paper given was entitled, "If You Were to Resign Would You be Re-elected?" It made such an impression upon the meeting I venture to say that everyone present asked herself the question. No matter who we are, whether man or woman, there is some position we desire to fill, and upon this object we spend much time, thought, labor and tact. Then, with all our talents, we generally require the good-will and opinion of others; and, after having gained these, can we hold the position, being true to self and the world, or, on account of success, do we become over-confident, less genial and less sensitive to the welfare of others?

At another meeting a debate was taken part in by six ladies; subject, "Resolved, that Wives Should be Self-supporting." This certainly aroused a great deal of enthusiasm, not only among the ladies, but the men could not keep away from the subject and debated it more than the ladies.

We had the Shredded Wheat people give us a banquet, which proved quite successful.

In February the clergymen of our town wished to hold a banquet in connection with the Laymen's Missionary Movement. The three churches were uniting, and not any one of the churches alone would undertake to cater for them, so they brought it before the Institute and, after some consideration, we undertook to provide for them. They allowed us forty cents a ticket to cover all expenses. There were two hundred men seated in the town hall at once. The laymen arranged the programme, and the ladies looked after the menu cards. The hall was decorated with our large motto, "For Home and Country," in blue and gold, the colors on our pin, and this coloring was carried out on the tables and menu cards. We are now quite proud of our Institute colors. The laymen gave us an excellent programme, addresses by J. A. Gundy, R. W. Allan and J. A. Paterson, K.C. It meant some planning and work for the ladies, but all enjoyed the evening so much they felt repaid for their labor.

We try to spend our funds to the very best advantage. Last December we sent two delegates to Guelph, thinking this would increase the interest. At Christmas we sent $15 dollars to the Sick Children's Hospital, and were sorry we could not send more. Thirty-one members receive *The Home Journal* and, in all probability, more will this year.

ADDRESS.

Burgessville Representative.

I am going to tell you something about our Institute work at Burgessville.

We have over fifty members and meet every second Thursday in each month. We usually hold our meetings at private houses. Our object in doing so is that we think it increases the interest in the meetings. We have topic cards for the whole year, and find them of great benefit to the meetings. Another interesting feature I shall call your attention to is something to work for, some object in view. You no doubt have heard people say, "What do the Women's Institutes accomplish?" or, in other words, "What good are they?" Now I think it becomes us to do something to make it quite unnecessary to have such questions asked, and to be able to show some good that we have accomplished.

Last year our Institute decided to organize a public library in the village. When we first spoke of doing so we were told by some that we would not succeed, as the matter had been talked of four years and seemingly could not be done. Nearly every person wanted a public library, but no persons seemed to care about taking the responsibility of organizing one. We finally called a committee meeting and arranged to have a garden party to raise the money. This meant a lot of work and anxiety, but, what was best of all, it was a great success and we cleared above all expenses $81. We thought we were rich then and we went to work with double energy. We had no trouble in getting our fifty members, which is necessary to send to the Government to organize a library. Next we applied to the County Council and they granted us $50, also the Township Council $25. The Government, I believe, gave us from forty-five to fifty per cent. of the amount we spent for books.

We then made arrangements with the Shredded Wheat Company to give us a banquet, which they very kindly consented to do, and we gave a concert in connection with it and realized $40 from that. We rented a suitable room and sent for our books. They arrived about a week ago and cost us about $132. I think they are the finest collection of books I ever saw. They consist of history, fiction, biography, etc.

Now, we have enjoyed the work very much, and I think after organizing and establishing a public library, as we have in our village, that the people of that place will not dare to say, "What good are the Women's Institutes?" We intend to keep on improving and adding to our library as fast as we get funds. We have appointed our librarian and everything is ready. We expect to open the library doors to the public next Saturday at 3 o'clock.

In conclusion I might say, if there are any millionaires here who are bothered to know how to make good use of some of their wealth, we would only be too glad to receive your contribution and, if you feel so disposed, you can arrange with me at the close of this meeting. In doing this, I believe we, as Institute workers of Burgessville, would rise up and call you blessed.

ADDRESS.

Mrs. Elliott, Ayr.

The Ayr branch of the Women's Institute was organized about two and a half years ago. Since that time our receipts have been about $318. Our membership fees have amounted to $50; our Government grants to $8.50; the proceeds of two sales of work to $62.25; our share of a union entertainment with the Farmers' Club to $45, and of a horticultural show to $152.20. In the same period our expenditure has been $207.

We have paid for hall rent $48. Our regular meetings are too large to be held comfortably in a private house, our attendance varying from thirty-five to one hundred and thirty. For these we rent a small hall at $12 a year. For special meetings, or for union meetings with the Farmers' Club, of which we have held five, we use a large hall, our share of rent for each meeting being $3.

Our printing for the same time has cost $32. We pay the local paper $3 a year for monthly notices of date and hour of meeting. For other notices we pay extra. We also use dodgers and large bills for special meetings. The dodgers are sent out in bundles of fifties to the teachers of seven or eight schools in the district and by them distributed to the scholars. By these means a wide ground is covered. Large bills are also put in the village shops and offices. Thirty-two dollars may seem a large amount for printing, but our attendance has seemed to justify it.

The aggregate attendance at meetings for the two years and a half is 3,500. This does not include the attendance of 1,200 at the Horticultural Show, nor 360 at our union entertainment, which would bring the total at our meetings to over 5,000.

We have tried to make our union and special meetings educational—that is, we have had a speaker on some special subject with a short musical programme. At these no admission has been charged, no collection taken.

We offered prizes for bread made by girls under fourteen and eighteen. Two or three months before these were awarded, we had a lecture and a demonstration on bread-making, and the school trustees gave the girls a holiday.

The expenses of these meetings have been heavy. To defray these, we have had two sales of work and an entertainment, realizing from these $107.

In September, in union with the Farmers' Club, we held a Horticultural Show. None had been held in the village before, and it was uncertain how it would be supported. It was agreed beforehand that the two clubs would finance it equally and be equally responsible for any deficit. It proved a success with five hundred entries and added to our Institute funds $152.20. The village children and the children from seven district schools were admitted free.

Our funds have been as low as two cents, but to-day we have to our credit $111. While it has not been definitely decided what our work this year will be, we have under consideration village improvements which will be of equal benefit to village and country women. It is also understood that we join the Farmers' Club in a second horticultural show.

We have aimed to put our affairs on a business basis, and to conduct them in a businesslike manner. We have not accepted the services of our local performers as a matter of course, but have paid for music, etc., furnished at concerts and union meetings.

When it has been required we have hired a man, a woman or a conveyance, and at all meetings with the Farmers' Club we have shared equally the work and expense.

CHILDREN.

Mrs. W. R. Hollowell, Goldsboro, North Carolina, U.S.

I am so glad I am a woman. I am glad I am living in the twentieth century. When I look into the faces of the women of Canada, and hear you call yourselves branches of an organization, I see that in the future you are going to become a mighty river that will carry to the ocean of humanity just what it is crying out for to-day. I am so glad that I have come to this convention. I thought as I looked at you of some of the remarks I heard in Washington City about the isolation of the country woman and about the life that she led. I wish the people who made those remarks were present to hear the reports which are being presented.

I believe strongly, ladies, in mental suggestion, and I hope that one of the first things that the Farmers' Institute Women sit down upon is the thought that a woman's life is a life of drudgery, and that she does not want to work, that she wants to get clear of it. Why, I never saw a lazy woman in my life. She cannot be lazy if she has a husband and children to look after.

One of the speakers at the convention of King's Daughters, held in the city of Baltimore, said, "I thank God that I am alive," and then she looked into our faces and said, "I thank God that you are alive." When she was over in Washington City a little while ago a woman sent for her to come to her home. She was a woman surrounded by everything that money could buy and had absolutely nothing left to work for, and Mrs. Bethume said she went into this darkened room that was so beautifully furnished, and the woman looked up at her and said, "Oh, I wish I were dead; life is a terrible thing!" Mrs Bethume said, in her brisk way, "Why, my dear, you are already dead! You are the deadest person I have come in contact with for years. Now, I am going to get down on my knees and ask God to make you alive. There is so much in the world to be done, and what you want to do is to get out and help to do this work; so I hope you are going to be made alive."

I am so glad that there are so many live women in Canada. I am so glad that you feel there is work for you to do.

A little boy once said he was so sorry for fathers because they could not be mothers. The first thing you want to know is whether I am qualified to speak on the subject of mothers. I am a mother four times over, and a grandmother three times over, and I left everything all right at home. My husband was willing I should come, and what I am talking to you about this afternoon is not what I got out of books, except the book of experience, and I am not going to tell you everything under the sun about children; it would take me twelve months to do that. Really, after the claim that I have presented before you, I want to tell you that it is always with a feeling of approaching ground that is sacred that I attempt to stand before an audience of mothers and talk on this subject of children, but I like to know just who I am talking to. A man once distributed tracts at a door, and a passer-by upon receiving one laughed. "Why are you laughing?" said the distributor of tracts. "You have given me a tract on the sin of dancing and I have a wooden leg," was the reply.

Now, I could say a good deal about children and the care of babies. I want you to think that one of the prime objects of your meetings is the instructing of mothers. Not the mother that is here, because you know—you read; you keep up with these things. I expect you have all seen "American Motherhood." Now, if you have not, send for a copy. I have a vision of the woman that is at home this

afternoon, the young mother, with her first baby in her arms, who has had no instruction as to how to care for that baby. I hope that in all your Institutes you will consider "The Care of the Baby." Many, many things are done in the first few months of the child's life that never can be remedied.

The care of the child. Why, when I was in Boston at the National Educational Association in June, I heard the finest talk that I ever listened to in my life on the care of the child, and there was this statement made, that in the French army there were soldiers that could stand everything; every hardship, every privation. It seemed as though their powers of endurance were unlimited, and they appointed a commission to find out how it was that these men who looked alike and seemed alike in every way were so different physically. The commission made a discovery; it was this: Every man that was strong and powerful and able to endure so much had been nursed by his own mother, had been fed with the food that nature had provided for him when a babe, had been kept free from the diseases that many mothers think children have to have, had been carefully nourished from the beginning, and the consequence was that their powers of endurance were almost unlimited. Please study that question of taking care of the baby, and bring it up to where I am going to begin talking to you this afternoon.

The first thing I would say in regard to the child is that there must be implicit confidence between the mother and the child. It is marvellous how soon the mother can destroy that confidence. Now, think of your own little child, how it comes to you and puts its arms about your neck and whispers to you what is of great importance to the child, and in a few minutes you may, in the presence of that child, laugh and tell what has been confided to you to the stranger who comes in. You thought it was *smart,* but, oh, the violence you have done to the child. I know a case of a little boy who loved very much a lady who was in the habit of visiting the mother, and he had heard a little about people getting married; and he whispered and said to the mother that he was going to marry this lady, she was so lovely. The mother told it in the presence of the child, and with shrieks of indignation the child declared he would never marry anybody, he was so outraged. I give that illustration to show that children know so much more than we think they do. They have a keener sense of justice and right than we have any idea they have.

The first thing that must be kept between mother and child is confidence of the child in its mother. It must be held inviolate. It must be the very first thing. Then, ladies, the child is going to come to you with all its problems.

There has been a great deal that is sentimental said about the child. Now, the child is very natural, and God has given us wonderful love for the child. There has been a tremendous mistake made in the past in taking it for granted that women through intuition born of love know just how to meet the needs of the child. Intuition can never take the place of knowledge, therefore we must study the child. We must study its disposition; we must study its nature; and as I stand before you I think of the four little children around my knee, and they were simply a mass of childhood. It was because none of those things had come to me then. I only wish they had. I only wish some one could have come and talked to me of the wonderful responsibility and joy there was in motherhood.

The care of the children that are given to us is our especial business; the claim of motherhood has precedence over every other claim in the world. It is your business to be a mother, and it is a serious business, and I love to hear the woman speak of it in terms of joy. It is blessed to be a mother. I heard Francis Willard

say one time, "Not every woman that has borne children has a mother's heart, and not every woman who has not borne children is devoid of it, for many times there is a wealth of motherhood." We have come in contact in the school-room with the teachers of our children, and I am glad of the wealth of motherhood found there.

Now, what are we going to do with the little child? It is inquisitive, it wants to know all about its being, and I am glad that was discussed in the *Ladies' Home Journal*. If you want the child's confidence you must tell it the truth, judiciously, just as the child's mind is prepared to receive that truth. That is as much as I will say on that subject now, but you think about it. Think of the wrong we do our child when the most sacred things that can only be spoken from the lips of the mother to her child are left for someone on the outside.

We are often asked as to the duties between the child and the parent. I wonder if, instead of having the mother write a paper on the duties of a girl in the home, we should not ask the girls to write a paper on that subject. I wonder if sometimes when we were talking of the duties of the mother to the child, we should not consider the mother's right. Do we get into conversation with the child and get its viewpoint? Children always want to help. The little child comes and offers its services; it wants to do what it sees its mother doing. The girl wants to wash the dishes and sweep and help—the little bit of a tot I am talking about, the child three years old which wants needle and thread and scissors. Well, what do we say? We say, "You run along and play, you are too little; you will break the dishes." "Oh, but you make a great mess; you run along and be quiet." "You get away, mother is busy this morning, she has not time." If we have not time for these children, mothers, what on earth have we time for? It is the best expended time in all the world when we take that child's offer of help at the time it offers it, and give it the thing to do that it wants to. Give it the needle and scissors and you will see that it will not hurt itself. I have seen it tried again and again, and I have seen how the child clears up all the trash and dirt it has made. I remember when I was a child, my mother's sewing basket sat on top of the eight day clock, she was so afraid of us getting at it, and how I wanted to sew. What is the result when we tell the child to run along and play? Do you know that children do not know how to play? We must teach them how to play. I heard some children playing out on my porch, and they were playing mother. What a commentary that was? I do not know how many of the children had thrashings, and how many of them were sitting in the corner. I do not know how much scolding and thrashing there was during that play. What a commentary it was on the homes. Now we must teach them how to play. It is the mother's place to guide and direct the play of the children.

Never say to your children, "Oh, I am so tired and I hope when you grow up that you won't ever have to do the work I have to do. I hope you will be a stenographer or teacher or typewriter. I hope you will do something else except all this work." We want to train our children that the best thing in all the world that they can do is to have a home.

Buy a piece of cambric and stitch it over and over on the machine, and make a book and give the children a magazine and mucilage and scissors and let them choose the picture of the house they want and put that on the front page, and then tell the child you want him to furnish the house. Some children furnish the parlor first, some the kitchen, but in that way the child will learn the rooms in a house and the importance of each. Make the book large enough so that they can put in

the contents, and at the very back the child makes a flower garden. There was something lacking, I learnt from the children, they said there should be people in the house, and before the child was through with the book there were just 37 members of the family. I am sure that would have pleased President Roosevelt. The next thing is a box with small water colors, and then give them one of those floral magazines and they will spend a whole day in coloring those flowers. Now I had not provided so much for the boy, but he showed me on the front page was the livery stable, and the saddles, and harness, etc., inside. They each had their book and they were not in any trouble, they were playing. That is a splendid rainy day occupation. Do not let them have the book every day. A lady once gave me a number of copies of "Puck" and I did not know what to do with them, but when I went to visit a school I filled it up with magazines and papers, and when we were hearing about the travelling library this morning I wondered if you exchanged magazines. Send them around in the communities where there is a dearth of reading matter.

Another thing that we can do in regard to the children is to always take a keen interest in the thing that the child has discovered for itself, and commend the child for it. A little girl was asked once what her name was and she said "Minnie" I mean your other name. She said "Mamma calls me Minnie Don't." I am afraid the children too often hear that "Don't," and they are too many times blamed and receive too little commendation. The child makes a marvelous discovery of something it can do, and the mother should take an interest in it. At bed time, the mother can tell the bed time stories to the child. I heard a mother say "My child shall not associate with such and such children." Just as soon as the child goes into the public school, just so soon the child is going to come in contact with all sorts of conditions. Those are the most precious years in the life of the child and they have been neglected by the mother. We have not realized how receptive their minds were during those years. I like it better where the child just naturally grows along by the side of the mother. Then, I do believe that we want the child to have its own magazine and paper come in its own name and let the mother read the stories that the pictures tell about. I had the Child's Encyclopedia which is just filled with all sorts of things in the simplest language, and I know of nothing that a mother can give a child on its birthday which will suit it better than a paper that comes to it every week in the year. It belongs to the child, and comes addressed to the child. Teach the child to take care of it, then let it pass it along to the children in the tenements. Teach them that there is always some one else that they can help and benefit

It is not necessary to speak about Christmas. We all celebrate it; but I think the biggest day in the life of the child should be its birthday. I do not think we tell our children in the right kind of way how much we love them. There is never a time any better than on its birthday to take the child in our arms, the girl and boy, and tell them how glad we were when the Heavenly Father sent that child into the home, and tell it about the good, sweet little things it used to do when it was a child, and on its birthday do something to celebrate that day. I heard a boy, who was in the Philippine war, say: "On my birthday, all day long, I was at home in the spirit with my mother. It matters not where I am on the face of the earth, on my birthday, in spirit I am home on that day, because mother made it so happy." Now, there is always something the child has a preference for, a certain kind of cake or pie or something like that. When my boy was 5 years old, I asked him what he wanted, and he said he wanted lots

of hard boiled eggs and Myrtle Freeman. She was five years old and he liked her because she paid him so much attention. You can invite the children in and let them play and give them some special privileges on that day. Thus you are making cords that never in all the world can be broken. You are binding the girl or the boy to the home, whenever you celebrate their birthday. It does not make much difference about their clothes—they wear out. If they are clean and comfortable, it is so much better than to spend so much time making the child appear beautiful, because that quickens the vanity of the child.

In punishment there must be the underlying sense of justice; no one is keener to understand justice than the child. We have heard it said that children should be seen and not heard. Children get into a squabble and are thrashed without an investigation being made. This was demonstrated in one of our schools. The teacher lived in the community, and she thought she was going to have a perfectly beautiful flower garden by the school house. She had it made, and the children tore it all up, and the teacher did not have any influence that year with the children. Next year they had to have a new teacher, and she was a wise woman. She said to them, "What made you children behave so badly last year? Why did you tear up that flower garden?" They said, "Well, anybody ought to have known better than to have made a flower garden on home base." We want to bear in mind the home base of the child, and try to see things from its point of view.

Now, ladies, we want to get to the point of view of our children. Let us never turn them loose. I know there are children good and children bad, and children indifferent, but the mother has unlimited influence with the child during the formative period. She has the child when it is most plastic. You know what the Roman Catholic Church says about a child and it's right. It says, "Give me the child until it is 8 years old, then you may do what you please. We have planted the seeds." I wish that we as mothers might recognize the fact that during these years we are planting the seeds that are going in years to come, bring forth the harvest. I wonder sometimes whether God Himself can wipe out the mistakes that the mother makes the first few years of her child's life.

I have just suggested a few things about the question of confidence; the question of helpfulness. There will never be that antagonism between mother and daughter and son in regard to the work they are to do if they are allowed to do it when they offer. The mother certainly determines to a great measure the ambitions of her child; the father not so much, it is the mother that determines the ambitions of the child.

I thank you for your attention, and I hope in these Women's Institutes which you are holding—and I wish I might say we are holding throughout the world—that you will always have the special conference for mothers, in which there will be the interchange, the exchange of experiences, and that the girls and boys whom we are trying so hard to rear for citizenship, the men and women of to-morrow, will receive their just share of consideration. May the mother always be kept in close accord and unison with the daughter.

I was in one home where the girl came in and said, "Mother, may I take down the pictures of Grandpa and Grandma and uncle so-and-so out of the parlor, every time I go in there I feel as if I were in a cemetery?" The mother said "No," and as the daughter went out the mother said, "That is the way our girls do. They go away and get all these ideas, and the mothers have no rights." "How often do you go in the parlor?" I said. "Well, I do not know, I entertain my friends over in the sitting-room or some where else." I said, "Then let the girl

do the very thing you sent her off to school to do—that she might improve—that she might have ideas of her own—that she might bring something back into the home of happiness and cheer and something that was æsthetic in the home." The mother called the daughter back, and said, "Annie, I have been thinking about it, and I think I will let you take those pictures and put them back in my sitting-room." And then I heard Annie singing and shouting and laughing and having the best time, and she invited me to go there and see it after she had re-arranged it. To-day that girl has a beautiful home and a lovely child, and the mother and child are in perfect unison with one another. But there is always the parting of the ways, and mothers are becoming wiser. Mothers, to whom God has committed a sacred trust, must be the ones who are to use wisdom and who are to feel that, whatever comes, my child is mine, and I am going to present my household and my children as a complete token at the throne of the Eternal.

PROGRAMMES AND COURSES OF STUDY FOR INSTITUTES.

Miss G. Gray, Toronto.

I have nothing very radical to suggest with regard to Institute programmes. The subject of systematic courses of study, which I wish to present for thought and discussion among Institute members, is not a new one. Its need has been felt for some time by young organizations, as well as by the older ones.

Glancing over the programmes which one sees when visiting different branches, one notices the absence of any well-planned course of study with sufficient time allowed for their rational accomplishment. Frequently one or two subjects are disposed of in a paper or in one afternoon. The result is an unsatisfactory, superficial knowledge of subjects which we know require time and study to master, which we feel we should like to know more about had we but available literature to study, and someone to direct the work.

In introducing this matter of Study Courses for Institutes, I have in mind a study of those subjects which pertain to the scientific side of home work, although others might be introduced later.

I feel sure that the women here, who have engaged at all in a study of the profession of home-making, have grown to feel that it is a profession, a thing of so great importance that it calls for years of preparation.

We need only to have our mothers tell of the conditions of their girlhood to understand something of the rapid industrial changes that have taken place during the last generation, and our grandmothers can recall us to a totally different world; so present day home-making must necessarily be a new profession; but, to call any work a profession, implies the existence of a certain body of related facts or principles, the inheritance of the ages, and, when we begin to examine the province of the profession of home-making, we are at once struck with the immensity of the field.

As the home is the unit of society, so home-making relates to all human activities. It relates primarily to the life and health of the family. The study of life brings us to the great natural laws relating to life, *i.e.*, chemistry and physics. The body itself is only a chemical and physical engine, and, when these forces stop, life ceases; so the profession of home-making includes some study of these laws, such as that matter cannot be created or destroyed—only transformed—that substances unite chemically only in certain definite proportions, and so on.

The whole study of life is called biology, but that part of the subject termed bacteriology is especially important to the home-maker, for it is the fundamental science in sanitation. Micro-organisms affect our foods, but the study is of greater importance in understanding and combating disease. The home-maker should know that disease-producing germs do not develop spontaneously, even under the most filthy conditions, but that every case of an infectious or contagious disease comes from some previous case, near or remote, and is the result of someone's carelessness or ignorance.

The subject of household sanitation includes the study of the environment of the house; of the best means for ventilation, heating, lighting; the sanitary disposal of all wastes; water supply, modern plumbing, and sanitary care.

Then there is the question of household finance and household management. The home-maker needs to know something about household accounts and how to keep them, if true economy is to be practised, and if the expenditures of the family are to be made in accordance with a high standard of life.

Motherhood is a whole profession in itself. It is universally admitted that the first year of a child's life, during which it is entirely dependent upon its mother, are the most important from the physical, mental, and moral standpoint. Therefore the care and training of children demand adequate preparation.

The question of food is, perhaps, the most important of all the physical problems of the home. No matter how good the raw materials, they cannot be made healthful and nutritious except through the aid of the cook. As Miss Barrows has said, "The home-maker needs to get behind the cook-book and understand the fundamental laws which govern success."

I have only outlined very briefly some of the most important subjects included in the profession of home-making, for, as said in the beginning, the subject is limitless and my time is short.

One thing that science has done for agriculture and should do for home-making is to make it so interesting that dull routine is changed to pleasurable activity. A man once said that, if, when he was a boy planting potatoes on the farm, he had known some of the wonderful things about plant life, the ability to take matter from the soil, choosing this and rejecting that, and through the agency of the sun's rays transforming these inert substances into living matter, if he had known only a few of these things, it would have given interest and pleasure to what had been mere drudgery. So, I have thought, a girl must feel when she discovers that the ordinary processes of cooking and cleaning are based upon scientific truths of physics and chemistry. The same process may be drudgery or pleasure according to the amount of interest and understanding there is back of it.

Are we ready to take up courses of study in these subjects? Some of the newly-formed Institutes may not see their way clear to do it yet, if they have to provide more popular features in order to interest the indifferent and increase their membership, but, in the older organized districts, it seems to me that it is the best means to continue the interest and increase the profit derived from the meetings.

The greatest obstacle to contend with in arranging study courses is to get the right kind of literature in suitable form. There is a set of twelve books on home topics, "Library of Home Economics," written and arranged specially for club study, which might be used. The books are divided into sections, and at the end of each is a list of questions bearing on the work in the preceding section. Running over these questions would serve as a review of the work gone over.

In response to demands from the Institutes, I feel sure that the necessary literature would be forthcoming for the Department. The newly formed organization in Toronto aims to be of service in this matter. Different Committees have been formed for different purposes. Miss Laird, Principal of the Lillian Massey School, is convenor of the committee on Household Science, and she is going to draft a syllabus of study that she thinks will meet the needs of Institute members. Then, compilation and printing would be only a matter of time. Miss Boulton, who has been intimately associated with the Daughters of the Empire for some years, will be prepared to furnish matter of a national or imperial character.

The subjects and methods of study to be followed could be decided by the different branches or by the district. When a choice of subjects was made, it might be possible to arrange for some competent person to meet the organization in order to outline the work for some months or a year, and then unsolved problems might be submitted to that person for solution, and, through reports sent in from time to time, the person in charge of the work could tell whether it was progressing satisfactorily or not.

No general plan of work has yet been made out, but it would seem best to devote a certain part of each meeting to the study of the chosen subject, and then have, as well, music, readings, discussion of current events, or short papers on important topics in order to avoid monotony and to interest and help the woman who most needs help and who might be discouraged and discontinue her attendance if too formidable a programme were presented to her. However, details of work might be arranged later.

The question for us to decide to-day is: "Do we want to seriously consider the taking up of systematic courses of study in our Institutes?" Do we wish to shake off any tendency towards self-complacency and strive for an efficiency that shall make the home-makers of Ontario the best in the land?

Mr. PUTNAM: During my absence in the early part of the session I believe you made a motion that I, as superintendent, name a committee to take up the question of some systematic method of teaching and of study. I will, therefore, name the committee which I would be pleased to have co-operate with me in this important work: Miss M. U. Watson, of Macdonald Institute, Guelph; Mrs. Dr. Godfrey, 95 Close Ave., Toronto; Dr. Annie Backus, Aylmer; Mrs. W. W. Farley, Smithfield; Miss S. Campbell, Brampton; Mrs. W. M. Thompson, Canfield; Mrs. J. E. Brethour, Burford; Miss Gertrude Gray, 650 Bathurst St., Toronto. This committee will be of assistance in formulating a plan whereby the Institutes will be better served.

THE CHAIRMAN: It is with great pleasure that I am going to call upon the Minister of Agriculture, the Honorable Mr. Duff. I have not had the pleasure of meeting Mr. Duff or of hearing him, and perhaps many of you are in the same position and I look forward with great pleasure to the treat before us.

ADDRESS.

HON. JAS. S. DUFF, MINISTER OF AGRICULTURE, TORONTO.

I feel somewhat out of place in attempting to address, for a few minutes, such a large and representative body of the women of Ontario. I was very forcibly struck, when I looked around this beautiful hall, with the splendid appearance of the delegates who are here to represent the members of the Women's Institutes

of this Province, and I think to any person who travels the Province of Ontario,—and they do not need to travel it to any great extent—and knows anything of the women of other countries and other sections of Canada, cannot fail to be impressed with the fact that, after all, Ontario excels the other Provinces in the women that we have, as well as in the many other things that give it the prominent position that it holds in this Dominion.

I did not come here to make a speech. I have come here on behalf of the Government, and to represent the Department over which I have the privilege for the time being to preside, to express my appreciation of the work in which you are engaged. You can rest assured that you have the sympathy of the members of the Government, and I believe of the members of the Ontario Legislature, irrespective of politics, in the work in which you are engaged. Anything that is for the upbuilding of our people; anything that lends to the advancement of or the beautifying of our homes, anything that assists in the amelioration of the ordinary troubles and ills of life, should have the co-operation of every thoughtful person.

I must congratulate you on the place in which you are holding your meetings. It speaks well for the movement that is on foot and has gained considerable headway in Ontario. You are bringing the people of the city and town and the rural district more closely in harmony, each to feel that what is of benefit to the one is of benefit to the other. I have no doubt in my mind that, when this hall was erected, it was not in the thought of the Governors of the University that in a very few years the women of the Province of Ontario, representing the Women's Institutes, would meet here; and only last spring we had the privilege of conferring here the diplomas earned by the graduates of the Ontario Veterinary College. So that this building, which, when being erected, was perhaps, in the thought of those who erected it, primarily for the University of Toronto, is turning out to be a building that can be put to splendid use for the representatives of the whole province.

Not having any particular knowledge of the programme, I will not attempt to discuss any of the things which have been presented to you, but there was a thought that came to my mind in listening to the lady who was addressing you when I came in, and that was with reference to a course of study in connection with the Institute work. After all, that is what we want in every department of the life of Ontario to-day. We want to find out what the different sections of this Province are best adapted for. We must appreciate the fact that the more we know, the more we will be able to use to advantage the opportunities which are ours, and we will be doing greater justice to the intelligence which God has given us. You will agree with me that in practically all sections of this Province there is splendid intelligence, but, unfortunately, sometimes not very wisely directed, and I have no doubt that one of the great thoughts that the representatives of the Institutes of this Province have in mind is to bring about the time when the intelligence of the homes of the Province can be directed in the wisest manner possible. I am not unmindful of that old adage that "She who rocks the cradle rules the world."

As I have said, I did not come to make a speech, but rather to express the appreciation of the work in which you are engaged. On behalf of Sir James Whitney and the other members of the Government, I beg to state that, as far as is within our power, you will have our co-operation and assistance, as you have had in the past.

GOVERNMENT ANNUITIES.

Mrs. Willoughby Cummings, d.c.l., Toronto.

I want in the first place to convey to you the loving greetings of the National Council of Women. The knowledge of your work is going broadcast all over the world through the International Council of Women, with which you are affiliated. So you see, you are doing good, not only in Canada, but in other countries as well.

The subject on which I am to speak to-day is a big one, but I shall have time to only touch on one or two points of most importance relative to making sure provision for old age by means of Government annuities. I am going to discuss this subject from two standpoints, 1st, as concerns yourselves, 2nd, that I want you all to be missionaries in this good cause and spread this information all over our country. These Government Annuities are such good things, but the question is, "How are all Canadians going to hear about them ?" and I ask you especially to help pass on the information to other people. I think it would be a fine thing for every woman throughout this Province if she could have an annuity from the time old age comes, but I am going to speak more especially concerning the young people and the children.

Perhaps you do not know that within the last twenty years a great change has come over the world. Before that time the provision for old age was a matter to be dealt with by the individual, society or a charitable organization. Within the last twenty years, the nations of the world have come to realize that it is a matter for the nations to look after, and within that time eleven nations have made legislative provisions for old age. There is not time to-day to tell you what they have done in other countries, though it is extremely interesting; no two have exactly the same plan. I am going to speak to you about the plan Canada adopted a little over a year ago. While it is called a *Government* Annuity scheme, it was passed in Parliament without a dissenting voice on either side of the House. Therefore, the Annuity scheme will go on the same way as does the Post Office, no matter what Government may hold office. It is intended for Canadians, that is, those who are resident in Canada. Canadians living in a foreign land cannot avail themselves of it, unless they return to live in Canada. Missionaries cannot buy annuities while they are away, but when they come home they may buy one, and wherever they live it will be paid to them. Anybody from the age of five years to 100 years may buy an annuity, but no annuity is paid until a person is 55 or 60 years of age, or whatever age you choose after 55, except in cases of invalidity or disablement, and such cases are dealt with individually. For example, a teacher in Toronto bought an annuity, payments to begin at the age of 55, and very soon afterwards she was taken ill with a disease which would make her an invalid for life, but not one that is likely to kill her. Although her annuity was not to be paid till she was 55, yet, this being a case of invalidity, it is being paid to her now. She had been saving for years, and had amassed the sum of $3,000, which she had put into this annuity, and now she receives a little over $200 a year, and will receive it regularly in quarterly payments as long as she lives.

The smallest annuity is $50 a year; the largest $600. The system is not intended for the rich, although they can take advantage of it, if they wish to do so. One millionaire who desired to be absolutely *sure* of protection in old age, has purchased an annuity for himself of $600, and one each for his wife and children.

There are two plans, A and B. If you buy an annuity under plan A and you

die before the annuity is paid to you, the whole amount that has been paid by you, with 3 per cent. compound interest, will be returned to your heirs. If you buy under plan B, in the event of your dying nothing would be paid to your heirs, but, if you live, you would have a much larger annuity.

A lady told me that she had $1,000, for which she was receiving 5 per cent. She was 43 years of age and wanted her annuity when she was 60. I found that under plan A it would buy her an annunity of $165 instead of $50; but if she bought it under plan B, it would be $222. She had no heirs; at least, her heirs were better off than she was, and she therefore decided to buy under plan B.

One thing disturbed some women very much when the scheme first came out, and that was that they are charged more than the men for annuities, and some said, "This is the result of men making laws and women having nothing to say in the matter," and so we made inquiries as to the reason why, and we were so surprised when we got the answer that we have been quite proud ever since. The reason is that we live longer than men, and this has been proven by statistics. The only statistics available are those of Great Britain, but they are the ones that are used in Canada by all insurance companies. They once took 109,230 boys and the same number of girls fifteen years of age, and they found out that at eighty years only 16,760 men lived as compared with 23,331 women. At ninety years of age there were 2,194 men and 3,922 women, and out of all that large number at 100 years of age there were only 15 men left and 49 women. We ventured to say that, while that might be perfectly true of Great Britain, the strenuous life we live in Canada might make some difference. Sir Wilfrid has promised that next year, when the census is taken, this matter will be investigated, and, if the women here do not live longer than the men, a change will be made in the rates.

I want to speak to you particularly on behalf of the children, and not so much from the standpoint of the children having something to live on when they get to be old, but because it is a matter of the greatest importance in teaching them thrift. I thoroughly enjoyed that address this afternoon about childhood, and I was wishing all the young mothers of Toronto were filling those galleries to listen to it. I want to carry it further and speak of the matter of thrift.

Since I have been interested in this subject, I have been going about among young women and young men wage-earners, and I am simply appalled at the condition of things as I find them. I find in this city of Toronto hundreds of young women earning what we call large wages, and you can easily count the number of them who are making any provision for the future. It is too often a case of "Easy come and easy go." A manager of a factory told me that one of the girl employees in his factory had paid $28 for a hat! Is it not surely time to call a halt somewhere? This spirit of lavish expenditure is too prevalent. The idea that the young girl must begin where the parents left off, that everybody must dress like the millionaire, and sometimes we are to blame ourselves. You know what a common thing it is with fathers and mothers to give the child a cent and let it spend it at once. That gets the children into the way of spending money without much thought about it. It seems to me it would be a movement towards thrift if the parents would begin to buy annuities for their children at five years of age, because it costs so little then to buy an annuity. For instance, if for a boy of five years of age $4.75 a year is put aside, which he may pay in weekly, monthly, quarterly, or half-yearly instalments, that boy when he is sixty years old will have an annuity of $100. Then when that boy began to earn money the parents could say, "We have been paying your premium up till now, but you must be responsible for it in

future." It would be quite easy for him to do so, and the chances are that, if he begins to save, the habit will grow, and that is why I am so anxious to get the parents interested on behalf of the children. There are a great many different aspects to the question and a great many figures I might quote, but there is not time to do that to-day. As I have said, I want you to be missionaries in this cause and interest others. You can do this by getting the printed literature from any Post Office and lending it to others. These tables show what it costs for each $100 from any age up. If any of the Institutes would like to have them for distribution I will have them sent from the Government direct to them.

I shall be glad to go and address any of your county conventions or any of your meetings if you will give me the opportunity of doing so. We could all quote dozens of cases of people we have heard of, those who have been wealthy and all of a sudden lose their money, and, therefore, it seems to me a wise thing to make sure provision for the future while you can do it.

I was speaking to about 250 girls in a factory the other day. I said, "You think this does not concern you; it will be some time before you are old; you think you will be married, and you won't have to provide for the future." But here are statistics again. I find that there are six million women wage-earners in the United States and one million of these are widows, while eight hundred thousand are married women who have to support their children as well as themselves. If we can urge the young people to make some provision for the future now, think what it will mean for the Canada of the future. I hope, therefore, you will all become missionaries in this grand cause, and that you will agree with me that the Government deserves the thanks of the community for having established this splendid Canadian Government Annuities scheme.

THE CHAIRMAN: This question which Mrs. Cummings has presented to us is one of the greatest importance to you as women. She spoke regarding the question of old age, that we live longer than the men, that there is to be an investigation, and, if we, as Canadian women, do not live longer than men, we will be equalized and not have to pay more for our annuity. This question of old age—what is old age, anyway? The latest scientists tell us it is not a question of the hardening of the arteries, but it is a question of the state of our glands which decides our longevity. Now, why I am speaking of this is that I want to make a point concerning the long life of women and why our annuity should not be at a higher rate. If our glands are destroyed, it is through what? It is through selfish indulgence, it is through smoking too much tobacco, through drinking too much alcohol. Now, no Government should set a premium upon vice, but every Government should set a premium upon moderation, upon abstinence, upon longevity. Therefore, whether or not women live longer than men, we should have the same rates on our insurance.

ADDRESS.

MRS. J. STEWART, BOBCAYGEON.

I am proud to be asked to appear before you, as I take a great interest in the Women's Institutes, and, as president of the Bobcaygeon Institute, I am glad to say that we have sixty members, and very nice members, very intelligent and very anxious to do a great deal for the work. I am district president of eleven other branches, and we are getting on very well. We always advertise our programmes

about two weeks before our meetings. We also send out post cards to people who are not members, saying that we are anxious to see them, and, when they receive the programme, the flattery of being asked results in securing them for members. We consider many different things in our Institutes, but I often say we are not ready yet to discuss literature, and that it is better to consider the small, trivial things of life which are usually neglected. The big things of life can be looked after, but it is the small things that are neglected. We live in the far north of the county, and all we do is to try to train the members to become efficient housekeepers and make different dishes in order to make the people happy and the men contented. We should always try to give the men as much attention as possible.

ADDRESS.

Miss S. Campbell, Brampton.

The Superintendent has asked me to speak of our hospital work in Peel. I was the one who spoke of it first, I think, and suggested that we should have a cot in some hospital where we would have any member go if she were ill, and where we could go and visit her and be able to look after her. I went to several gentlemen, some of the most prominent in the town, and among them a doctor, who said, "Oh, Miss Campbell, don't take that cot out of Peel." I went to our Mayor, who has since passed away, and he said, "Well, you go on with your work and I will call a meeting." After a time I said, "Will you give us your sympathy? We want even more than sympathy, we want money." He said, "I will give you money, too." I went to the Sheriff, and he said he would give us a donation. I went to several of the Institutes, and our County President went with me, and she talked it up. We will have a great many discouragements, I know, but it is worth some discouragement if we are able to float a flag over a Women's Institute Hospital in Peel some day. We had our bazaar last year and made $830 clear, and to-day we have, as a Women's Institute, over $1,000 to help the list of donations. We have formed a board of five women, who have taken out a charter. I believe they are the first five women who have ever taken out a charter. Now the next step is to see how much we can get in our own town before starting to ask for donations in the county. We are planning a banquet for the purpose of interesting the people in our scheme. Now, we do not intend to go into debt. We intend to do just what we can get the money to do with, but we want something good, and I feel that quite a number of the gentlemen are going to give us a donation. One has promised $1,000. Perhaps some others will not be so agreeable, but I do feel that nothing is gained except by work. I was inspired by that paper we heard to-day, and I will go back to Peel and never give up.

ADDRESS.

Mrs. C. Emerson, Burlington.

We have been much interested in listening to the manner in which the ladies of our Institutes manage their programmes. It is nice to get new ideas. In Burlington we do not meet in the homes, but we have the privilege of meeting in the

Public Library, and we think that is the best place for us that can possibly be found. As we own a piano that we bought two years ago, the present library board offered us the use of the library room, free of all expense, on condition that we let them have the use of the piano free at any entertainment they might have, so that is all we have to pay for the use of the room.

I was asked to mention what we have been doing with our money. We thought we would try to do something for somebody outside of ourselves, and the object that appealed most strongly to us was the Hamilton Sanitorium on the mountain top, and so we started to raise funds to assist in some part of their work. We began first by giving a garden party a year ago last July. It was held on my own lawn and we changed ten cents admission. A member of the Daughters of the Empire said she wanted to entertain the Women's Institute at her home, if we ladies would provide the refreshments. She arranged the programme, and it certainly was an excellent one. We took up a free will offering, and the money that was given that afternoon went towards our sanitorium fund. In the meantime I had $5 from one Institute and altogether we had $27 clear to add to our fund. Another lady invited us for an evening, and said if we would find the refreshments she would attend to the programme. We had a very excellent meeting and received over $25 that night. Dr. Holbrook wrote me and said, "We have found the proper object for your money. We are building a shack for the children. We have in Hamilton a trained nurse to visit the schools, and there are so many cases of tuberculosis in the schools we have to have a shack for them, and, if your Institute will assist us in furnishing the shack we will be very much obliged." About three weeks ago he wrote and told us he was ready for the cheque and we sent $85 from the Burlington Institute for that purpose.

Our Institute is flourishing, we had one hundred and twenty-nine members at our last meeting, and we always try to have something on the programme which will help each one present.

ADDRESS.

Mrs. Brethour, Burford.

We have always heard and read a great deal about the brotherhood of man, but I think it was left for the organization known as the Women's Institute to bring out the true significance of the sisterhood of woman. I have always rather felt that there was no need for such an organization as the Women's Institute in the city, but since coming to Toronto I have changed my mind. In the city the women have their Art Clubs, their Music Clubs, their Reading Clubs, and all kinds of clubs, to say nothing of bridge clubs, and in the country we have so many less advantages or opportunities of meeting together. It has, however, been impressed upon me that an organization of the Women's Institute in the cities and larger towns would bring the country women and the city women closer together. If that should result, it would be a very laudable innovation, because I am sure that we, in the country, who have many less advantages than our city sisters, would find very much to learn from them, and this would be of great advantage to us. If, on the other hand, our city sisters were drawn more closely to us, they would find that a woman can live on the farm and still retain a little of her refinement. The city woman has a rather wrong idea of her country sisters. She feels just a little bit better than, or above her country sister, and perhaps the country woman feels just the same towards the city woman.

I have been asked to summarise some of the best things that have been said since the Convention began.

I could not go on without alluding to the very beautiful thought that was brought before the Convention, namely; that the love of our own country should be inculcated in the youth of the land. The teachers should be the first in the country to take that up and encourage more patriotism in the public schools. Love of our country does not necessitate hatred or even indifference to other countries.

We are often asked "What is the Women's Institute doing?" I think anyone who has attended this Convention would have learned a few things that we are doing. We have 16,000 members, and, if the organization has set 16,000 women thinking, it is doing very good work; if it has set all these women *doing*, it has certainly done good work.

I would like to take the delegates back ten years, when, we might say, we began at the kitchen, because it did seem impossible in those days to get up any kind of a good meeting or any enthusiasm, unless we had a demonstration in cooking, but now-a-days it is very rare that that has to be resorted to, to get out a lot of women. The talk now is all about Public Libraries, Travelling Libraries, the improvement of our schools, the health of the school children, and other matters of general interest dealt with on scientific principles. From beginning at the kitchen, we have not only gone through the house, out of the front door, but into the streets of the Municipality.

ADDRESS.

C. C. James, Deputy Minister of Agriculture for Ontario.

Some of us can remember when it took but a small room to accommodate the delegates from the Women's Institutes of Ontario. We saw them move into a larger room and find that too small, and so they decided this year that they would come to the City of Toronto, and they have come right into the heart of the University of Toronto. There is some significance in that, I think. I would not have you understand that the ladies intended to take possession of the University, but they have a cause which they believe is worth working out and proclaiming even from the centre of the great Provincial University.

Every once in a while we pick up a book and we become interested in the story of the development of one of the countries of ancient times. It may be the history of Rome or Greece or Egypt, with its rise, growth, and downfall. We become interested in the story, and we wish that we could for the time step into the history of the past and live in that period, or that we could realize more fully what was being done. Do you women of Ontario realize, not that you are reading the story of some by-gone country that has lived and died, but that you are living in a country which is now making a history, and that you are part of that country; that you are helping to form the history of that country. Canada is growing relatively as rapidly and broadly and strongly as any country in the world. When we speak of the country growing, most of us think of the tens of thousands, yes hundreds of thousands, who are pouring in to the great prairie lands of the West, and we say, "There is history being made in this country. On past the Great Lakes, that is where the growth is taking place, that is where history is being made." But we may need to revise our opinions. Right here in the Province of

Ontario, in the centre of the Dominion of Canada, history is being made, and you women especially have it in your power largely to determine what that history shall be. This old Province of Ontario, old to us, but young compared with the great countries of the past, has had an interesting history.

Many of you, no doubt, have read of the early days, when a few thousand people, mainly settled on the farms of New York State and Pennsylvania, desiring to maintain their connection with the British Standard, enlisted, or gave their sympathies to the cause of Great Britain, and to show their devotion to the country, when no longer it was comfortable or possible for them to stay where they were, packed up such belongings as they could carry with them, left their homes and took up land in this great wilderness that stretched from the Ottawa River west to the Lakes.

Do you realize what an important part the women played in laying the first foundation stock of this Province from 1785 to 1812. It would have been absolutely impossible for the earliest settlers in this Province to have cut out homes for themselves in this great wilderness, to have built their crude log huts and outbuildings, to have made their simple furniture, to have cultivated the small clearing on which they grew a little wheat, some oats and a few potatoes, to have reared their families and to have made the simple clothes upon which they were depending at that time, more than, perhaps, at any other period in the history of this Province, if it had not been for the women! Those of us who are inclined at times to think of the difficulties under which we are laboring, of the troubles with which we have to contend, might well turn back and read again the story of those early days, to see how the mothers and the sisters and the daughters worked laboriously indoors and out of doors and helped to do a man's work six days, and, in many cases, seven days out of the week. Those were the days when the women of Ontario showed true heroism, as perhaps has never been shown in any other period in our country's history. And during the war of 1812 many of the farms of this country were cultivated by the women and children at home, while the brothers and fathers were off at the front.

After peace had settled once more and the country began to renew its period of production, there began the great trek over the ocean from England, Scotland, and Ireland, and what a different kind of coming to this country it was then from what it is to-day! The Britisher who to-day decides to come to Ontario with his family goes to London or Bristol or Liverpool, buys his ticket, and steps on board one of our ocean liners. If he comes by steerage he finds there is more comfort, more convenience than the settlers had who came to this country in the thirties and forties and fifties. He has little inconvenience in reaching his destination and settles down on new land in this country with the expectation of making a most comfortable home in a comparatively short time.

What a change from the days of early settlement! The father, the mother and the family came down to the quay, bringing with them not only their few possessions, a few implements and a few household furnishings, but also a supply of food for the voyage, and what a voyage! A week? No, four weeks, six weeks, eight weeks, sometimes twelve; and there, as the boat is tossed about by the storm which that little frail vessel seems almost unable to resist, the care of the family devolved largely upon the mother and the older sisters. They landed at Quebec or Montreal and the troubles were not yet over. This little family had to make their way over the trail, or come up in one of the rude, simple boats that were rowed or poled up the St. Lawrence. The troubles of the mothers increased every day. The burden of caring for the members of the household, providing food,

avoiding sickness and accident, and finally the settlement in the clearing, devolved more heavily upon the women of the household than upon the men. It is well that we should remember these things. When we consider our own advance and the recent development of our country, we should not forget that our fathers and our mothers, our grandfathers and grandmothers encountered great difficulties and overcame them, and we are enjoying comfort and prosperity because of their heroic lives.

We come down to 1867, when Upper Canada changed its name to that of Ontario. At that time there were a little over one million people living upon the farms of Ontario. Within the towns and cities there were hardly three hundred thousand; almost four times as many people living in the rural parts in 1867 as there were living under town and city conditions. Just about that time the agricultural life of this country began to go through a change. That was the time when our great dairying industry began to develop. Going back to the first period when oats, wheat and potatoes were the main crops and even ashes were a product of the farm, and coming down to the more complicated period introduced by the settlers from the Old Country, we pass into a still more complicated period in 1867, when our dairying industry began to introduce a new element into the agricultural life of this country. Fruit growing also began to receive some attention, but it has only been within this last decade that it has begun to assume large proportions.

During these early days when the care of the household and so much labor devolved upon the women of the farm homes, the women found their social intercourse largely in the associations or gatherings which have passed away almost entirely from the homes of this country. Those were the days of the good old-fashioned paring bee and the quilting bee and the carpet-making bee—bees of all kinds. Whenever there was work to be done in which the women could co-operate, there was co-operation, but through it there was a social development that was an absolute necessity for the life of the people. As our agriculture changed and as city life developed in this Province, the factory came in and robbed the country of on of its essential features. The great factories that have been built throughout our cities and towns have made it unnecessary for the farmer's wife to ply her needle as much as formerly and for the farmer to make so much for his home comforts. The result has been that gradually there has dropped out of the life of the home a great many of those elements which gave it its warmth, its homelikeness, its sociability. When the cities and towns began to develop by manufacturing, there disappeared, of course, out of the country life one of its most interesting elements. Farm life became much simpler, there was less variety of work, but the farmer had to work harder and still harder in order to make a living. Then there came into the life of the country, the Women's Institute, modelled to a large extent upon the Farmers' Institute. It is finding a welcome, the size of your gathering here to-day is the greatest proof. From a few, you have become a great handful; from one organization, you have increased until now you have six hundred Women's Institutes in the Province of Ontario, with the possibility of a thousand within another twelve or eighteen months.

Why have I referred to the past? Not to discourage, but to encourage; mainly to prove to you women of Ontario here to-night that you have inherited something from the past history of this Province, that you should be proud of. The part that the women played in the development of this Province in the early years, the part that the women played in the settlement which came in from over the seas,

is one which any country might well be proud of, and you, as you think of what your mothers and grandmothers did, should take hold of the work that lies nearest your hands in connection with this Women's Institute, take hold of it as though you could not be discouraged by anything, but carry it on, determined that certain reforms and regenerations shall take place in connection with this country.

What is there to do? It is very important that, in connection with your work, you keep in your proper sphere. It is well for us to know what we can do, it is just as well for us to know what we cannot do and the Women's Institute will be wisely directed if it leaves alone those questions with which it is not particularly concerned. The Women's Institute has before it one of the greatest tasks in this country in the up-building and development of the homes of this country.

The men of this country, in the main, have failed in their duty and responsibility in connection with the country school house. I do not think I am putting it too strongly. The men have been at this job for over one hundred years, and what are the results to-day? All you have to do is to go into the country and there you get your answer. Here and there, it is true, you will find a little school house with its ornamental shrubs and trees, a neat and attractive place, just such a place as we would wish our children to step into, but that is the exception. The men have not been able to solve that question and, if it is going to be solved, I can simply say it is up to you women to rebuild and regenerate the country school house.

There is no work in the whole Province of Ontario, whether it be the work of the Legislature or the work of men's organizations or clubs, of more importance than the work that is entrusted to the Women's Institute. Knowing what you have done, and what you are capable of doing, we feel quite certain that in your growth and development, in the transaction of your business, in the consideration of your problems in the demonstrations which you are arranging for, in all the working out of your large programme, you are going to accomplish what you have set out to do.

THE CHAIRMAN: I remember hearing Mr. James say, two or three years ago, that he thought they had started at the wrong place when they started with Farmers' Institutes instead of Women's Institutes. I do not want to be too hard on the men, but I do not think the Farmers' Institute offers the diversity to the men that the Women's Institute offers to the women.

CO-OPERATION OF COUNTRY AND TOWN WOMEN IN THE WORK OF THE INSTITUTE.

MRS. ROLAND, GALT.

Concerning the co-operation of town and country women, I might say that, in our society, we wish to do all in our power to bring the country women in touch with the work of the Institute. At the present time we are having what we call "Chain Teas." Now perhaps some of you will not understand about our Chain Teas. For instance one lady invites a number of ladies who are not members, and the hostess serves lunch. Then these ladies are asked to join the Institute, and in this way we hope to enlarge our membership and be more sociable. We raise some money for charitable purposes. We think it always best to have an aim.

In our riding we hold three executive meetings every year. There are eight

branches and two members from each branch attend. At these meetings, the business of the county is discussed and programmes arranged for the year.

We always try to be sociable with those in neighboring societies by inviting them to any social function we may have. I might just say that a number of branches have been organized around our town among the country people, which, I think, goes to show the progressive state the Institute work is in throughout our riding.

A few months ago we gave a Talent Tea, which was very successful and we intend holding a banquet in the near future. Then we have an annual picnic, at which we always invite the country people, and in June we have a joint annual meeting, where the officers are elected for the county.

But aside from this, I think there is still room for improvement on the social side. I think every member should take an active part in the society and help to raise the standard for home and country.

THE CHAIRMAN: I think it a very capital idea to ask non-members to the house of some prominent Institute worker to try to get them to join. There has been a great deal of discussion this afternoon about the management of Branches, but I think the management of Branches is like the management of husbands—we all have to learn to manage our own. One says they cannot get a large attendance without having afternoon tea, and another would say it is better to meet in a hall than a private house. If it suits your locality to meet in a hall, meet in a hall; if you get along better without afternoon tea, do not have it; if you get along better with afternoon tea, why have it. I was impressed with Mrs. Roland's remarks about all the members taking part.

ADDRESS.

MISS LINDSAY, CALEDONIA.

The question as to whether the members be from town or country never concerns us for one moment. That is one reason why we co-operate so well. What possible reason is there why town and country women should not co-operate? Are we not working for the same object—home and country?

Perhaps, to a certain extent, we had already co-operated in church work, but in the Women's Institute we have the co-operation of all churches, both town and country women. We employ a few methods that we think help towards co-operation. We change our president each year; one year we have a town president and the next a country president. Last year we had a town president and a country vice-president; this year, vice-versa.

We hold our meetings at the homes of the different members. We generally hold our summer meetings at the homes of our country members, and usually the winter meetings at the homes of our town members, and as for our programmes we try to make them so interesting that no woman in town or country cares to miss them. Besides the papers that our different members give, we have asked men of the town, a lawyer, banker and minister, to speak to us, and we have printed programmes which we have inserted in the newspapers. With a membership of sixty, we have an average attendance of nearly sixty.

A spirit of kindness is encouraged; no matter how poorly a paper is prepared or how badly delivered, not one word of criticism is ever heard. Therefore, when

we ask anyone to take a paper, whether she be a country or town woman, she never refuses, but says, "I will do the best I can." But perhaps the best thing that tends towards the co-operation of our country and town women is serving lunches, which are prepared by the different members—never by the hostess—and it is not simply for the sake of the lunches, but for the social talk. We try to make every one have a sociable time, and I have heard a town woman say she never knew there were so many nice women in the country until she joined the Women's Institute.

ADDRESS.

MISS STRONG, PERTH.

Perth Institute has been organized about three years and has a membership of one hundred and two, which we hope to increase soon, as many attend the meetings who have not yet joined with us. We hold our meetings in Perth Library Hall. During that time we have purchased some valuable books, and recently added to them, and supplied ourselves with a book-case, and hope to have a good library sometime not far distant.

We have listened to some very instructive papers and addresses from members and others. We have also enjoyed some very pleasant social meetings in the way of our annual picnic and such like. We open our meetings by singing the Maple Leaf.

As to the co-operation of country and town, I think our members are about half from each place, and I am quite sure no association has ever brought us so much in touch with one another. For myself, I think that our motto should appeal to every true and loyal heart, irrespective of place or position, and that self-forgetfulness, a due regard for each other, mingled with a whole-hearted interest in the work, are the essentials to bring co-operation among those of all classes and creeds. Perhaps our success in that way is due to the fact that the people in and around Perth are especially a people of the home, and, generally speaking, regard home-making and the upbuilding of moral character above everything else.

In conclusion I would like to say that I hope we may constantly grow nearer to each other. You of the cities and towns need us and we need you, and we need to work together with unflagging interest to banish the abounding evils of the age and try to upbuild homes and a country of purity, integrity and love.

THE CHAIRMAN: The spirit of criticism has been almost entirely done away with in the branches. I remember some years ago when it fell to the lot of some of us to take the chair, that you would hear little whispers here and there, and perhaps it was the very women who could not put a motion to the meeting. It seemed to be those who could not have done nearly so well. I am glad that criticism has died out.

ADDRESS.

FRANK WARD, BATAVIA, N.Y.

I am glad indeed to be here and to bring greetings from the Department of Agriculture of New York State to the Canadian Institute workers. We know much of your work here, and we have been looking this way, as well as at the work in

our own State, and we realize that you are in the very forefront of the battle for better agriculture.

I was glad to be in Canada two years ago and to attend some annual meetings, and I was deeply impressed with some of the good features of the work in Ontario; so deeply impressed that I went back and had a conference recommending that some of the methods of working here be adopted in our own State, and we have found that they work well, and then they sent back here and got some of your leading speakers to come over into our State, and they did such good work that they kept them there, and you need not be surprised if they become good Yankees on the other side of the river.

This work that we are engaged in is a serious work. It has always impressed me in that way. The work of bringing about a higher, broader type of agriculture is a work of stupendous proportions, when we realize the great value of our farm lands and our farm stock, and the money value there is attached to agriculture. We should be encouraged in thinking that just a little improvement in the methods of work is making the cows produce a little more and the chickens lay more eggs when the price is 40 cents a dozen, and we are raising more and better wheat. Speaking of wheat, I was surprised when I was at the Experimental Station and Professor Zavitz told me of the increase of wheat that could be traced directly to the work of the Station. The figures were so big that I could hardly comprehend them, and so when we can lift a little here and there it makes a benefit that is almost beyond comprehension, but it seems to me that the great work of the Farmers' Institute is not alone in learning how better to combine a balanced ration for a dairy cow; it is not that we may formulate better daily rations, it is not that we may improve the quality of our live stock, but it is that there shall be a deep, strong under-current of influence that will make men and women better men and women, that will make farm life better, more enjoyable, for it is the best place in the world to live.

I have heard most of these ladies speak this evening—speaking of the town women and the women of the farm. I do not like to hear people talk like that. There ought not to be any town women and country women, we all ought to be one. There ought not to be any town men and farmers. I think the farmers are just as good and probably a little better than any other men, and I know the farmers' wives are the best wives in the world.

The farm home ought to be the brightest home on earth, and when we come to cross over the river there is no place quite as near to the better land as the old farm home. So when we are increasing the farm crops, when we are learning how to feed the cattle better, when we learn how to prune the orchard more scientifically, let us remember that life is more than meat, that there is something more than all these material things. If we fail in making better men and women, and better boys and girls, we have largely failed in our work—the higher work of the Farmers' Institute. I do not intend to preach, but still there ought to be a high moral tone to all Institute work, and I think here in Ontario you are doing much to make the Institutes useful along this line, more than we are, through the influence of the Women's Institutes.

For some reason the Women's Institutes in New York State have not gained as strong a footing as they have in Ontario. I do not know why, but for some reason the people do not seem to take as kindly to them. Perhaps it is because we have not such trained lady speakers.

Our Farmers' Institutes have increased in usefulness and they have increased

steadily in number until now they are a power for good, the attendance during the last winter being far greater than it ever has been before, and I think that they are one of the strongest factors we have for the betterment of agriculture. Of course, our Experimental Station is doing great work, and our colleges in agriculture have increased in attendance very rapidly. Not a great many years ago there were about 175 to 200 students. They have kept increasing until now we have about 1,200 scheduled for the coming winter.

I want to congratulate you, both the women and the men, for what you are doing along the different, but closely united, lines of work, and bid you Godspeed, and we trust that you may be blessed in this great work of lifting up the farmers and the farm homes in Ontario.

ADDRESS.

DR. R. FALCONER, PRESIDENT OF THE UNIVERSITY OF TORONTO.

It is with more than ordinary satisfaction that I come before you this evening to say a few words to such a representative gathering of the women from the Province of Ontario. It is, I think, peculiarly fitting and happy for us that you should be meeting within the precincts of the University of Toronto, and although it is somewhat late, Madam Chairman, I am glad to say that we welcome you within the University, and are glad that we are able to use this hall.

I am sure many of you have come to the University with interest, not only to take a part in these meetings that you have had yesterday and to-day, but to see the place in which some son of yours, some brother, or some near relative, spent, at least, half or more than half of the year, or may have done so in the past, or is likely to do so in years to come.

I am facing a very different audience this evening from audiences that sometimes not only occupy the seats that you are in, but fill the hall to overflowing, and, if you were among those students who are outside waiting for some ceremony to begin, and would listen to the 1,800 students who are gathered together in that hall, and are making the echoes resound from side to side with joyous notes and with the fullest kind of expression, you would probably say, "Is my boy there? I cannot conceive that my boy could possibly have one-eighteen-hundredth part of that volume of sound issuing from his throat." But, I assure you, ladies and gentlemen, the things that your boy can do when he is in the University of Toronto are sometimes things you would not believe he was capable of doing at home. (Laughter.) And those of us who, from some remoter distance look on, wonder just what next your boy will develop, because the amount of ingenuity is simply astonishing at times.

However, let me assure you of this, that I believe your boys and girls are in as safe quarters when they are attending the University of Toronto as they could be in any other University or College town. You may often see things in the newspapers about what students are doing. Papers are very helpful at times, but, also, papers may be very aggravating; and the complaints that are made to you about the students are complaints that sometimes, when you investigate them, have less foundation than at first sight would appear.

I myself had experience as a student for nearly seven years in a University, almost as large as this, on the other side of the water, and I have been more or

less closely associated with students all my life, and I may say without the slightest insincerity that from my experience, now going on to four years in Toronto, I believe the boys and girls that you send to the University of Toronto are as well behaved and fall into as few temptations, and are as pure in mind and heart and life as any students you will find anywhere. I say that with absolute sincerity, and I believe it is true.

Naturally your attention will be drawn to the University because of this large part of your life that you are entrusting to us for a few years. We cannot guarantee anything, we cannot guarantee good behaviour, we cannot guarantee scholarship, we cannot guarantee that your boy or girl will be better when he or she leaves than when they came, but at least we can do our best, and we hope you will discover, as this Province has discovered in the long history of this University, that it is, as a rule, an immense boon to your boys and girls to spend these years here, and to equip themselves further for the work of life.

Before going on further, I may answer a question that has been put to me when I first came into the room, as to who these are whose portraits are hanging around this hall. The first on my left is Dr. McCaul, for many years President of the University and University College. His name is very well known in the Province of Ontario. The next is the Hon. Edward Blake, now living in his old age in the City of Toronto, after a very distinguished career, for a long time Chancellor of this University and a great benefactor. The next is Goldwin Smith, who died last June, Governor of the University. Above, on the left, is Sir Charles Moss, Chief Justice of Ontario, for a long time Vice-Chancellor of the University, and now on the Board of Governors. The next is Sir William Mulock, also for a long time Vice-Chancellor of the University. The next is Mr. John Hoskin, for a long time Chairman of the Board of Governors, very recently retired, still on the Board. The next is Mr. Thomas Moss, brother of the present Chief Justice, Chancellor of the University, and one of the very distinguished graduates. The next is the father of the Blakes, that very distinguished family of this Province. The next is Sir Daniel Wilson, President of the University in succession to Dr. McCaul. President Loudon's portrait is just being painted in England, and, if it has not yet arrived, it will arrive any day and will be hung on these walls soon. Behind this screen is the very interesting portrait of Bishop Strachan, the real founder of this University, and also of Trinity University, now Trinity College, and affiliated with this University.

One other reason why it gives me much pleasure to welcome you this evening and to speak to you is because of the work that you are doing for the home. Whatever is done for the home, in the way of guarding it or enriching it or ennobling it, is being done also in the way of guarding, enriching or ennobling the State, for we believe, we Anglo-Saxons, we believe profoundly that the pure home, the intelligent home, the home of interest, lies at the root of a pure, intelligent, and strong nation. It is the hearth from which warmth spreads through the life of the people and enables them to cope with their difficulties and to be alert for all emergencies. The home should have about it the distinction of permanence that few institutions have.

This country is in a state of movement, of restlessness. We notice our people leaving the older Provinces constantly, giving up what seem to us to be places of great comfort, and moving, we are glad to say, now mainly to the West, abandoning what formerly had been accepted as satisfactory and as sufficient, and making their pilgrimage out into the unknown, in a spirit of adventure, as a rule; but

also in a spirit of restlessness, and the result of it all has been the home in the older Provinces has been losing some of its permanence. Of course, this is a new country, and very probably the spirit of our fathers, which urged them to leave their homes across the sea a generation or two ago, may not altogether be out of their sons and daughters. And still the movement of the people is West.

Those of you who remember history well, remember that there have been great eras of migration; times when, in the making of history, thousands of years ago, out of the vast waves of population, wave upon wave rolled towards the West. You know how over Europe there rolled tide after tide of people filling up vacant lands and afterwards there was a season of rest, a common solidifying of people into nationalities and the development of character. In our times, we are amidst one of these waves of population, and the migration coming from Europe flowing westerly breaking upon our shores, and coming far into the West, and, as it comes, it takes our people with it, and, as a rule, they are carried on the crest of the wave; as a rule they occupy the best in the new places. But, ladies and gentlemen, this is a hard tax upon the older Provinces. It is a hard tax on a young country which seems hardly to have had sufficient time to lay its foundations deep enough in the older Provinces, because there is no question that a degree of permanency in the human life is necessary to develop the strongest and most effective type of character. Restlessness, a spirit of movement, unceasing, swaying and looking for new interests, will undoubtedly lead to a type of character which cannot be so sturdy as has been developed in the old countries.

I happen to be reading, at the present time, a biography of a famous imperial statesman, who died a generation ago, and the fact of his life of which he was proudest was that his father was the ninth Earl who had lived on the same estate. When he became the Governor-General of India, the most distinguished Governor-General, he said that, in comparison with that office, he treasured his descent as far more valuable.

Now, in Britain, that permanency of the home, the lingering of the people, generation after generation, in the same spot, has meant much, so that, where you go in small localities, you find people of a distinctive type, thinking for themselves, acting for themselves, different from those even a short distance away, and when they go abroad it takes a generation to wipe away from them the thought and character that has been ground in them.

Take certain types of the Scotchman, for instance, who came very early to our country. A boy may come here at ten years or younger and, in how many instances, you will discover in the man of eighty a most distinctive type that all the experience of the new world has not been able to obliterate. What has been the reason of that? It is his inheritance of the permanent type that does not cease with the individual, but which is transmitted from generation to generation.

There is a mystic continuity in life. We know we believe in a future, and that we have a life in the future, but we also know that our present is a part of our past, and that no individual can possibly be understood if that individual is wrenched from his environment and simply stood by himself alone. Now everything that you can do in these older Provinces to make the home stable, to keep our people where they are, to settle them on the soil where they may remain with a pride in their past and with a desire to transmit something to their posterity, every effort that accomplishes that object is adding powerfully to the permanency of the character of our people as a whole; and anything that we can do to counteract this restless movement at present and to keep our people with us, is, I believe, of value

not only to the new countries, but to us in the older Provinces, to whom the new countries must for a generation look more or less for leadership.

Therefore, I believe that we should take pride in our homes. The farm should be so cultivated and the house should be so adorned that it is meant to remain, not merely to be sold for the best price it can bring to the newcomer, in order that you move on to higher and richer things. Money does not constitute life, but the home which has been handed to you, the home of beauty, the home around which your associations gather, the home from which your childhood has issued, the home that you can transmit to others, is an asset that you cannot possibly estimate in so many thousands of dollars; and that it has a real value, a value that cannot be gotten in the newer Provinces—and that is a truth that ought to lay hold on our people of Ontario and the Maritime Provinces and Quebec. I am perfectly sure of that, and we should realize that and endeavor to spend ourselves upon our homes. Unfortunately, too often, as we go travelling through the country, what we see—as Mr. James has said—are signs of carelessness, utter disregard of the appearance of things, no thought of the immense attractive power of external forms of comfort and of ordinary care spent upon the dwelling place. A little care means a great deal, a little attempt to bring beauty brings also its own reward. I should like also to emphasize this duty to us as citizens of the older Provinces, to put our thought upon our homes, not merely for our own sakes, but upon our homes as a permanent centre from which we and our parentage and our kindred will influence the country.

Another reason why I congratulate you on this movement is because you are in this institution recognizing that it is necessary that the life of the home should be helpful and should be comfortable. Now that may seem to be secondary, and eloquent speakers may think that, after all, it is ideas that count—eloquent moral conceptions, eloquent political conceptions, even eloquent religious conceptions, or those expressions expressed eloquently; but, after all, the attraction between comfort and morality is very subtle, and it is a good deal easier for the man or boy to be moral in the home where he is well fed, where he has comfortable surroundings, where he has a mother whom he can love and be proud of as well as love, where also he has the health with which he ought to be endowed as he goes forth in the beginning of his life. These things are all factors in contributing to the moral character of the boy or the girl—a certain physical basis for morality and for religion; and it is no idle part of your work, I am perfectly sure, that of considering in your meetings and in your conferences, how it is possible for you to make the home more comfortable and to make the environment of your family more ideal. However, it is not only in these external matters, obvious as they are, that you have interests. I know from your programmes that are in the pamphlets setting forth the purpose of the Institute, that you have other interests. The meeting together in order to cultivate interest is important for this reason: life is tolerable, not in so far as it has outward comfort; moral life is enjoyable, not in so far as you are endowed with this world's goods, but life is tolerable and life is comfortable and life is enjoyable in so far as you have a variety of interests, and in so far as your life is full of objects towards which your mind can go out with the prospect of pleasure. Too often we think we are going to remove the restlessness of the country life and make the people more contented to live in the broad spaces of God's world by giving them better markets. Now, I know that markets are very essential. I should not be so foolish as for a moment to deny that; but a better market is not going to restore the interest in the country by no manner of means. Telephones strung from house to house, even automobiles, which are remarkably numerous in the city—how they are so numerous I cannot under-

stand—even the ability to drive your automobile from farm to farm would not make country life necessarily tolerable or more so, nor having all the equipments of city houses. These things would not do it. Why, it is an old story, as old almost as history, that the most restless people are the people who seem to have all that they need, who scour the earth for what purpose—to add money to their large store? No; but to find some new interest to replace the interest that has already died. Bodily comfort does not give interest to life. Do you think that the child who is able to get a new toy whenever he is wearied of the old one gets more joy out of his life than the poorer child who puts his ingenuity on the things around about him to make a toy for himself? Which of these two has the greater joy? I hardly need ask you. And so it will be unquestionably in all life; it will not be merely an addition of external comfort that will make people satisfied with their lot, but it will be the adding of interest to the life that we have.

There is a well-known lady of England who writes on economic questions, Mrs. Rosengault, and she wrote a book a few years ago called "The Strength of the People." After investigating the social problems of Britain, she says, "It is not poverty, but it is the want of interests, that has been the cause of social misery." That is a very striking utterance. "It is not poverty, but it is the want of interests that has been the cause of social misery." That is true of any grade of society and what is required is to bring new interests into every line of life, and one reason why there has been such a success for this movement is that you are by it bringing new interest into your lives, seeing a new meaning in it that you did not recognize before. Where are you to find those interests? Well, I believe that any successful life will find its chief interest and joy in the work that lies before one to do. We pity the man or the woman who lives months of the year and hours of the day in drudgery at work waiting with a sigh for the short period in the evening or the short holiday in the summer when he or she will get relief from the work that has to be done. The happy life is the life in which the man or the woman discovers an interest in doing the thing that has to be done, and these interests are enabling you to understand more about the work that engages your attention from day to day. They are teaching you the meaning of domestic economy, they are teaching you more about the farm, more of the purpose of health, giving you insight into the scientific reasons of life, enabling you to understand why the things are done that you do every day by bringing intelligence into the work that you are doing, they are creating for you a new meaning in your work and they are making you more intelligent.

In addition to that they are broadening your interests, because a portion of our life is always spent on things that are not necessarily merely moral; to enable us to secure a living. Our intelligence is gauged by the way we spend the odd moments of our time, and in this way also your Institutes are bringing your interests, interests in what others are doing, interests in the state, interests in the schools, interests in your church, interests in the world at large, and in this day of telegraphs and newspapers, what an immense field is opened up for you. If I am not much mistaken it was when the men and women of our fathers' time met together to discuss interests outside of their life, that the immense political power, for which Canada is famous, sprung, because we have had a good record politically. It was from these groups that the sons of the country went forth, understanding the principles on which their government rested and the things for which they had to labor; and, to the astonishment of the world, in the last ten years, Canada has suddenly come before the nations as a new people and a people whom others are looking at, wondering what the issue is to be.

Just one more thing before I close. I spoke of the home and of the home remaining the centre of attractive power and its being transmitted from generation to generation. If that is to be possible, it will be because in that home there is a centre of intelligence such as you are endeavoring to cultivate, a permanent centre of intelligence. Remember that people are interesting, not according to the measure of what they know, but according to their power of thought and their type of character. Some of the most uninteresting people in the world are the most learned people. But the people of power and interest are those quick to think and shrewd to see the meaning of things and who are alert to look abroad and see the trend and movement of life. From these homes of the country there comes constantly that stream of your best, often coming into the University and cities; and I have over and over again felt that there are few things more pathetic in life than the process of alienation which sets in after the boy or girl, coming into the new environment, finds new interests for the first time that he or she should have found at home, becomes a new person, and when he or she goes back to the old home, it is to find things so woefully changed that no longer can there be the same community of interest that there once was. That is one of the most pathetic things in the development of youth. There is no reason why that should be, if the home is what it ought to be, it will not be so. If you cultivate interests in your home, it will not be so. If you cultivate your mind and your thought, not necessarily that you are to know as much or to have the experience of your children, but that you keep yourselves alert with interest and your character bright and clear, you will be ready to understand them. You will be ready to sympathize with them and, when they come back, they will take a pride in seeing that you have grown even as they have grown, although it may not be in exactly the same way.

For all these reasons, then, I say cultivate interests, interests in the work, to understand the work that you have to do, and broader interests that will give you an intelligence by which you will never really grow old and will be always able to understand new things as they come to you. It is to this end, I am sure, that the work of these Institutes will contribute very largely and it is to all of us who are interested in the life of the people, a geat comfort to know that this movement has taken such a strong hold. (Applause.)

MR. PUTNAM: I would not venture to appear before you again were I not certain that that sympathy and support which you have always extended to me will continue. After listening to the ladies, Dr. Falconer and Mr. James, I feel it quite out of place to ask your indulgence.

The questions which have been handed in during the convention will be classified later and answers given, some in our annual report and some in the official organ, *The Home Journal.*

We appreciate the assistance that has been rendered in making this convention the success which, I am sure, we all vote it to be. We are particularly grateful to Mr. James, our Deputy Minister, to Dr. Falconer and to our good friend, Mrs. Hollowell, from North Carolina, and I think she will tell you, before the session is concluded, that she is not sorry that she came.

Some three or four years ago one of the prominent workers said to me: "The great trouble I see in having a successful convention will be to arrange something as good, or better, for next year; you cannot surpass this convention." That was four years ago. I think we, who have been at all the conventions, will agree that every convention has been better than the preceding one, and I am sure you will all go back enthused with the importance of the work and will co-operate with the Department in systematizing the work and making it more effective. The greatest

responsibility does not rest with the Department; we have a part to do and we have, of course, an important work in selecting the lecturers. You have the greater responsibility and you have the burden to bear. I am sure that you will accept the responsibility, and we shall see the Ontario Women's Institutes accomplishing more in the years to come than we have yet dreamed.

ADDRESS.

Mrs. W. R. Hollowell, Goldsboro, N.C.

I know Mr. Putnam recognized the fact that I had a due appreciation of reciprocity. Canada has done so much for North Carolina in sending such fine representatives, they have done so much work, and such fine work in our State, and I can never thank Mr. Putnam enough for having invited me to come to Toronto. Like the Queen of Sheba when she heard of King Solomon and his greatness—of Canada's greatness the half has not been told by your representatives to our State.

As I listened to the representatives from the Branch Institutes, I would think "Oh, I wish I could transplant that Institute to North Carolina, that is just what we need there." Then I would hear the next and that would be better still; and then when I heard your doctor this afternoon on the question of Medical Inspection in the Public Schools, I wanted to take her to North Carolina, because we need that so much. When I saw Dr. Backus presiding with such dignity and such ease and grace, I wanted to take her to North Carolina to show women how to talk and how to preside. You know they talk about women having wonderful tact and ability, but I want to say the most tactful person I ever saw in my life is Mr. Putnam. He does not appear to use you at all. He lets you do just as you please, but he is the power behind the throne.

I am so glad that there are so many representatives of the home. When I listened to the President of this University, and his words of appreciation of what the home meant. I knew every woman here would go back to her home feeling that she was going to make it, if possible, better than ever before, because there is not one shadow of doubt but what the strength of our nation does depend upon the strength the purity and the happiness of the homes, and it is the woman who makes the home. I am willing to give due credit to a man for all he can do, but, if you want to know what kind of housekeepers men are, you go and spend a month with your brother, or go into an old bachelor's quarters. They cannot make a home by themselves to save their lives. You take a girl and she will go into college and will in a few minutes convert the bare room into a place that is just as homelike and have a feeling of cheer, as it is possible to have. There are a great many things men can do that women cannot, but they cannot make a home to save their lives. There has never been the man born who can do it; and, as we have all decided, after listening to the President of this University, that home-making is the greatest work, that it is permanent, greater than anything else; and I am sure there is not one of you that will want to take a man's place, but that you will be satisfied and be glad to do the work that is in truth God-given.

Now, I went to your Horticultural Exhibition. I had had that feeling of wanting to transplant you in North Carolina, but after I saw the splendid products of Canada, especially the apples—and I inherited from Mother Eve all the liking

for apples— I felt that I wanted to send for the good man at home and the children and come up to Canada to live. I can never thank Mr. Putnam enough for having invited me to Canada. I hope to be here a few days longer. I am going to visit some of your Public Schools, and then I must see Guelph. The dream of my life is to have established in the South land an institution after the order of Macdonald Institute. Our State Superintendent said to me, "Whatever you do in Canada, do not fail to see Guelph" and he expects to be there in a few days.

I am so glad to be here, and I hope some day you will come to North Carolina and bring us a blessing that every Canadian that has come brings. I am very glad and very sure that every one who ever comes from Canada will find a warm welcome in the State of North Carolina.

THE CHAIRMAN: We have all been delighted throughout the Convention to have Mrs. Hollowell with us. She has delighted us with her talks. I am sure the hour is past now when our meeting should draw to a close. We will close the Convention by all joining in singing "God Save the King."

The Convention was then declared closed.

A MOTHERS' INSTITUTE.

MISS E. J. GUEST, M.A., BELLEVILLE.

An Institute of Mothers and of women with the mother heart, that sure test of true womanliness, was organized last year in connection with the Belleville High School, being the first of its kind in the Province. Originally composed of High School mothers and teachers for the purpose of bringing home and school into closer and more vitally helpful connections, it had for its object the study of the needs and tendencies of the students of high school age.

Its scope had to be speedily enlarged, however, for wide-awake mothers of children of public school age began to desire admission, with the result that its plan of action now takes in the needs of the child from one to twenty-one years of age, in the home, the school, the community, and the state; a large field and one in which much pioneer work has to be done, for but little state attention has been heretofore given to their two great aims—scientific motherhood and scientific child-culture. Both Dominion and Provincial governments were appealed to for scientific information, but practically none was forthcoming. "Why that is very strange," commented a member, "the Department of Agriculture sends out experts to help the farmers in stock and grain judging, and in the care and feeding of horses, cattle and pigs. Aren't the children worth as much as these animals?" "Well," was the terse reply of another mother, "You see you can sell pigs, and you can't sell children!"

Listening to an able address by a leading statesman on "The Conservation of Canada's Natural Resources," these women silently remembered that sixteen out of every hundred babies in Ontario died in infancy, largely because of lack of skill in their management. Again they wondered, but set themselves to contribute their mite to the conservation of what in their opinion was Canada's greatest natural resource—the native-born Canadian child.

And here they received a pleasant surprise and a lesson. Both Governments, as represented by the Labor Department of Ottawa and the Department of Agri-

culture of Ontario, as well as the leading citizens of their own city, showed unexpectedly cordial sympathy with the movement and a quick appreciation of its national value. The lesson was that organized motherhood that studies its problems and knows its needs may count on active assistance from both men and governments in Canada. There are places where men must lead and women help, as in the world of material progress, but there are also places where women must lead and men assist—in the child world, the world of human nurture and progress. Father hearts, as well as mother hearts, are needed to get results in the great *Science of Living.*

"Many hands make light work." This Institute is a firm believer in committees, and, besides a very efficient Executive they have a Programme Committee to outline and arrange for subjects of study for each month. A Sanitation Committee is to co-operate, so far as may be helpful and desirable, with the Board of Education in attaining clean, sanitary and hygienic conditions in the school. This gives evidence of being a very useful committee, for women as a rule understand cleaning, especially, better than the average busy man, who frequently feels about the matter much as a certain famous lecturer did when he said, "House-cleaning? A nightmare! A horror! Why should unfortunate man be put into purgatory before his time? It's against nature to expect a man to be happy in a perfectly clean place, for," triumphantly, "man was made of dust, and unto dust he will return. What's the use of expecting him to make himself miserable by keeping out of it for the brief space between? It's contrary to nature, I repeat, ridiculously contrary!" As women cannot be cured, however, of an ineradicable tendency towards cleanliness, it seems reasonable to suppose they would be economical and thorough-going assistants to school boards in this line.

An Art Committee devotes its attention to a study of the effect of beautiful and artistic environment on growing minds, and to beautifying the school with fine pictures.

One question that early presented itself with great force was the play problem. What especially was to be done with the long vacation? The sight of a line of children waiting on a hot Saturday afternoon for the moving picture shows to open, with their disastrous effects on the eyes, the moral questions arousing discussion throughout the Province, the appearance of two small self-organized armies of miniature men from the public schools who indiscriminately hurled epithets, chunks of ice, clay or even stones at each other, who fight in season and out of season until, not only morals, but bones were endangered, gave food for serious thought. Here was a perfectly natural and healthy demand of natural and healthy childhood for organized play. What was to be done with it? Rightly directed, it would strengthen the body, develop quickness and accuracy of thought, and moral self-control; left to itself, imminent dangers threatened. The result was that a Playground Committee was formed and playgrounds and apparatus began to be considered. The decision was quickly reached that the most important piece of apparatus was a play supervisor who knew children, knew how to direct play, and understood how to develop character through play. A lady was secured who, in addition to a kindergarten training, had supervised New York playgrounds, and seemed eminently fitted to guide boys and girls through play to life's best victory, self-control. It remained only to secure money and equipment. The cordial support the Committee received from the citizens and the Board of Education revealed the general appreciation of the efforts of the "Mothers' Institute," as it is popularly known.

The Merry-Go-Round.

The Slide.

Voluntary co-operation on the part of the boys to clear the ground where a tree had fallen, at the same time getting ready for a bonfire.

The Board offered the use of a lot of several acres in extent, beautifully wooded in the rear and with a large open space on the part suitable for baseball, foot-ball, and tennis. They also cleaned it and put in benches, tables, and water supply. Two citizens contributed the supervisor's salary, while others donated swings, see-saws, sand boxes, merry-go-rounds, and money for slides and other equipment.

The supervisor came in July, and so did the happy children—about three hundred of them, from babies who babbled and played in the sand boxes to boys in their teens who delighted in creative work and organized games, and girls old enough to like to assist with the supervising. Sometimes the mothers came, too, and had tea under the large, old trees. Hand-work such as basketry and jig-saw work was taken up later, and three times a week a quiet story telling hour was enjoyed in the afternoon.

The grounds remain open from ten to half-past five daily for the younger children who are then sent home, while they remain open in the evening for senior games. Close supervision is maintained in the afternoons when most are there. In this way, the beginning of wise direction of childish energy has been made, and the end is not yet.

Next year a study will be made by the Mothers' Institute of the child's bodily needs, growth and care.

A Vocation Committee will make a beginning in getting information to help students find out for what line of work they are best fitted, thus attempting, in a measure, to prevent the tragedy so often seen of the right man in the wrong place, the square peg in the round hole.

Work and possibilities and difficulties loom large before these mothers, but they have bravely resolved to do what they can in a modest way, fully convinced that "The noblest study of mankind is man."

HOME DISCIPLINE.

Mrs. Owens, Chesley.

When I consented to introduce this subject before you to-day I had not thought of its breadth and many-sidedness. It might be dealt with from a number of standpoints, any of which is important. I cannot hope to more than touch the subject, trusting you to emphasize what may be worthy and bring out other points in the discussion which follows, that we may have brought before us what we consider as most important in "Home Discipline."

We have all heard the saying, "A man's home is his castle," That is true, or ought to be, but it is equally true that "Home is a woman's battlefield," for she must constantly bear the responsibility of moulding the home, and the matter of discipline rests largely in her hands.

She must be so many things, this disciplinarian: she must be neat, that the home may be; she must be sweet, or the home will not be; she must be prompt, that all the machinery of the home may move with regularity, the engagements of the various members of the household punctually kept, and all the duties properly met; she must be willing and unselfish, setting aside her own preferences, that the constant tasks (often disagreeable) which every home demands, and upon which its comfort depends, may be performed; she must be sympathetic and lov-

ing, so that the right atmosphere may be created; she must have strength of character and self-control, that she may not fail to meet all the tests which daily confront her. And who shall say which is the great or which the small test, so much depends upon her ability and conscientiousness in meeting them all.

And not only must she possess all these attributes: Neatness, promptness, willingness, unselfishness, sympathy and love, strength of character, and self-control; but, most difficult of all, she must impart them to others.

Now we are coming to the real meaning of our subject, and we suppose there are young lives in the home to be disciplined, and we narrow it down to the question of the very best home discipline, that we may develop the very best in our boys and girls, the lack of which will spoil their lives. Every mother has this wish constantly before her, that her children may grow up nobly, to make the world better because they have lived. What anxiety the thought costs us, that this result rests largely with us.

Among the items which the home life will determine are: (1) Habits of industry; (2) Conceptions of God, duty, honor, truthfulness, honesty, etc.; (3) emotional reactions, likes and dislikes; (4) vocabulary, habits of speech, love of books, and literary talks: (5) motor reactions, posture, carriage, etc.; (6) habits of cleanliness, neatness, table manners, etc.; (7) habits of obedience, accuracy, promptness; (8) habits of study; (9) standard of conduct and morals.

The home must not be permitted to neglect these fundamental elements in character, thinking that the school can make up the deficiencies, for it cannot. We can see that these matters cannot be determined by the school, for the schools gets the child too late in its career, and too few hours per day. It is true that too often the school has been made the dumping ground for the home and expected to supply what the home has neglected. Nothing can take the place of the teaching and example of the home. The whole problem is not that of telling children this or that, but of surrounding the child with the most helpful ideals and the power of good example furnished by father and mother.

I have always thought that the first important thing we can teach our boys and girls is *Obedience*. We cannot begin to teach this too young, nor can we teach it too constantly. It is the foundation upon which everything else rests; indeed, no progress can be made without it. Let the child disregard obedience to father or mother, he will continue to disregard it in the school. He will disregard the laws of God, and, finally, the laws of the land, becoming at an early age a criminal. On the other hand, if he obeys the laws of the home, every other law is easy, and his feet are set in a good path which will lead to honor and happiness.

Another important lesson which cannot be emphasized too strongly is *Industry*. I was talking with a man of this town not long ago, the father of a fine family. He told me that from the time they were small they worked. The question which looms big before us to-day is: how to combine work and education, especially in the case of the boy. This question does not trouble parents in the country, but it does concern fathers and mothers in towns and cities. In the country there is the woodpile, which means going to the glorious woods, cutting down the trees and sawing them, piling and drawing them home, splitting and piling. Now, the boy may not engage in every step of the process, but he can see it done, constantly learning methods, and he can pile it and carry it in to keep the wood-box full. Then there is the maple sugar season, seed time and harvest, in all of which the out-of-town boy is very useful. There are always chores after school, which means something to feed and pet and love in the way of horses, cows, sheep, hens, kitties, etc.,

so that his time is happily and usefully occupied. But in town, who has a wood pile? We buy our coal and the boy has very little to do with the fire in the cook stove; many of us buy our milk from the milkman, thus robbing the boy of a chance of helpfulness. The butcher, the baker and candlestick maker bring everything to our door, and the willing, good-hearted boy is to be congratulated if he has any regular duty which adds to the comfort of the home. It is the regular daily duty that the child executes most cheerfully. If asked to sweep the verandah and steps occasionally, there may be a show of unwillingness; but, if the child is made responsible for doing it every day, the task is performed with the utmost cheerfulness.

Industry has so much to do with content. The child who hardly knows what to do next is the one who is always begging for pennies to spend, thus laying in store habits of wastefulness.

We can deal with so many things in this matter of home discipline. I have been pained more than once by the way people in responsible public positions are criticised in the home by parents in the presence of their children. Especially is this harmful when teachers are the subject, for no teacher can secure the best results with a boy or girl, if that pupil has heard father or mother criticise him or her.

Another most important thing in the formation of character in our boys and girls is what is done with them after tea. I am referring now to the early formative period in a child's life, from infancy to eight or ten years. Should they be allowed to run out in the street in the evening, and remain there until the bedtime hours, which may vary according to convenience, or should some pleasant employment be found for them at home until the early regular bedtime hour arrives? Doctors tell us that an abundance of regular sleep is absolutely imperative for children, in order that they may be furnished with the reserve strength which they draw upon so heavily in later years when life begins to be strenuous: lacking this, they are not much more than nervous wrecks long before their school days are over; but, with this to draw upon, they are in a condition to do their best in the competition and struggle which they really enter upon at about thirteen or fourteen years of age.

I merely mentioned the words *Truthfulness* and *Honesty* when I spoke of those items which the home life alone can teach. We all feel that their importance is beyond rubies or fine gold. In order that we may teach truthfulness, we mothers must be absolutely truthful ourselves. We must never make a promise which we do not fulfil, even though the keeping of it is a trouble at times. We must never put a child off with an untruth. Here, above all things, we reap what we sow, if those honest eyes detect deceit in us. For they certainly do detect it, if it is there; and, on the contrary, their confidence in the father and mother who are absolutely true to them is most beautiful and complete.

Perhaps I should have dwelt on *Self-control* earlier in my paper. In teaching self-control it is necessary that the mother shall have firm control over herself. She needs self-control in not giving way to her child. A mother's love is so great and so unselfish that I am sure if mothers could only be brought to feel the importance of restraining their own pleasure in the delight of their children, and would look further ahead, they would make more sacrifices than they do. It is so hard to say "no"; it is so easy to say "yes," especially if we gain a little present relief, as well as the child present pleasure. Restlessness is one of the first trials of childhood, and motherhood too, but it opens the door for endless little lessons in self-control and order. Notice a little child playing: first, the child wants his blocks, plays with them only a few minutes, perhaps does not play with them at

all; but, as soon as they are fairly out on the floor, wants something else. Now it is a ball, then nothing will satisfy but a slate and pencil; meanwhile, all the other toys are left scattered about. The easiest plan for the mother, at the moment, is to let him go on in this way, and then put them away herself by and by. But the mother who looks to the future will not do so. Here is an opportunity of teaching him self-control, by trying to interest him in them, showing him perhaps some new thing to build, and, in any case, teaching him that they must be put away orderly. All this, of course, takes trouble, but such lessons cannot be given without trouble. Indeed, nothing of real value can be taught without painstaking, but the true parent recognizes this and faithfully goes on imparting line upon line, precept upon precept, here a little and there a little.

Then, too, every mother owes this much to her children: that she lays the foundation for religious belief—without set lessons on taxing the memory, gradually the mind is led on from the wonders and beauty in nature, in the stars, flowers and insects, in sunshine and storm, on to something greater than these, to something greater and more powerful than father and mother, some Being on whom they in turn depend. There is something in the very nature of children that readily receives the belief in a very real relation between their Heavenly Father and themselves, long before they can have any set ideas from the Bible, and this should be quickly cultivated. So much a mother owes, and so much, I believe, the child's nature demands and is adapted to receive. If this foundation is laid, he will have something firm to stand on when, in later years, the tempests of skepticism and unbelief sweep over him, as they do sooner or later assail every thinking young person.

Another thing, and I have done. The early years of a child's life is the time to teach attention. In no way can a parent aid both teachers and pupil in their school work, and life work, more than by teaching the child attention during the formative years. The parent who has been careful in this early training will be rewarded by seeing him grow up with a mind active and alert—one who will be alive to details, and who realizes that what is worth doing is worth all the attention one can give it.

After all is said, we have the satisfaction of knowing that each generation is an improvement on the last, and that children of good parents rarely go astray. So let us keep our ideals high and make home the happiest place in all the world, with plenty of smiles and few cross words, then there is no reason why our children should not grow up to noble manhood and womanhood—and who could ask a greater reward than that.

HOME TRAINING.

Miss Ethel M. Eadie, Brantford.

This is a subject which should appeal to all, both men and women.

In order to hold a position of any importance, one must usually become qualified by passing certain rigorous examinations. I wonder how many home-makers could answer correctly the following questions: Why does cream rise to the top of the milk? Why does milk sour? (Our grandmothers used to say that the thunder made it sour, but does it never sour when it does not thunder?) Why does a stove smoke? Why is many a child ill when the teeth come? (It is just as natural for the teeth to be formed as for the finger nail to grow.)

The work of the home is complex. Let us note a few causes of some of the difficulties with which one may meet. Is the baking table on one side of the kitchen, are the utensils on the opposite side, and the materials on the third side or in the pantry? Back-breaking lifting is frequently done on "wash day?" A simple siphon (a bent tube will do) will empty your tubs for you, if you will trust to the laws of physics.

A University student, taking the physics and mathematics course, had a friend who was engaged to be married to a doctor. The latter did not know anything about housework and did not want to know. She said, "Oh, it will come to me when I have it to do." This student said to her, "The man you are going to marry has spent seven years in preparing for his life-work and you are not willing to spend that many minutes." The greatest labor-saving device in the home is the home-maker. Some say, "Oh, you are laying too much stress on cooking and all these practical things." We wish to lay enough stress on them to master them and prevent them from engaging all our time and energy. I have heard a bride talk for ten minutes on how she made a bread pudding, expecting praise for having accomplished "something to eat." You might as well consider it praiseworthy to be learning addition in the fifth form of the high school.

We will look at the value of home training, first, from the standpoint of economy. Economy means spending to some good purpose, as well as saving. We may economize in time, energy and money. Step-savers, laborsavers and lack of worry will do this. "Executive ability is the stronghold of the kitchen. Many rush here and there and accomplish nothing in the nervous heat. Think and plan and the work is done as if by magic." We must discard non-essentials and harmful habits. Some time ago I found this statement in a book on household economics: "A doctor is a tinker and a cobbler compared with a cook. The former can only repair damage, but a scientific cook can keep a person well." I quoted this for the benefit of a medical student, who retorted: "A doctor deserves great praise and honor for even attempting to repair the ravages of the dynamic bombs of cooks." We should, then, be able to economize energy and often great expense by preserving health. Edward Howard Griggs says in his book on "Moral Education," "Avoidable disease is no less a disgrace than any other form of vice." Although physical efficiency is the aim of Household Science enthusiasts, the training in this work is not complete without some study of home nursing and treatment of emergency cases. In this way life itself may be preserved. "Knowledge is the instrument of love."

The importance of home-training, however, will not be accepted by all, unless we prove that it has an educational value. If education means "a fitness for life," surely we have pointed out that this subject is worthy of attention. But what is the result on the individual's mental capabilities? A girl is in a cookery class where bread mixtures are being studied. Nature's laws are experimented with sufficiently to show what conditions are necessary to produce a good loaf of the "staff of life." Then each student must control these conditions and produce a good sample of bread. This combination of thinking and doing is ideal. Moreover, the student does not use this achieved power-to-do in making a loaf of bread only, but she takes it to her arithmetic, grammar and geography lessons.

This study creates a closer relationship between the school and the home; gives the student an idea of cause and effect, leading to a control of her environment. "The management of a home is a business, a profession and a very complex and difficult one to master." Every good housekeeper is not a good health-

keeper, and every good housekeeper is not a good home-maker. "A home is the workshop for the making of men." Women are ingenious and often become ideal home-makers through experience, but how sad a tale many tell of the first bitter days of learning by experience. This training may be got at MacDonald Institute, Guelph, or the University of Toronto. Many other schools and colleges are adding this work to their curriculum.

What will be the effect of this training on the social system? The servant question is a grave one. It will not be solved till the mistress is trained. Just so soon as we do away with haphazard work in the home will we have girls anxious to engage in this work and less attracted by the better organized work that they at present find in large institutions or factories in the cities. The temperance question will be less troublesome when the standard of living is raised. We find intemperance among the ill-fed and the luxuriously pampered palates.

Spencer says, "The preservation of health is a duty. . . . Man's habitual words and acts imply that they are at liberty to treat their bodies as they please. . . . . The fact is, all breaches of the laws of health are physical sins. Seven million dollars each year are voted for securing plant and animal health, while six million infants die yearly. Munificent gifts for hospitals are laudable, but "prevention is better than cure." So let us train women to be able to control the conditions of life, so as to evolve the sane mind in the sane body.

The artistic possibilities in the home are not to be neglected. We must learn to appreciate the beauty of simplicity. Much could be written of the responsibilities of the home-maker, as consumer or spender, as being equal to those of the producer of wealth. Bargain counters would shrink and all but vanish. Good work has been done in demanding pure food laws, but we need also pure textile laws. "Demand regulates supply," then let us have an intelligent demand.

Kingsley says, "The secret of thrift is knowledge, knowledge of domestic science saves income, knowledge of sanitary laws saves health and life itself." Can we not raise the standard of work in the home to the ideal of Hamilton Mabie: "When toil becomes free, it is transformed into work, and when work becomes spontaneous and instinctive, it is transformed into play. The toiler is a slave, the workman a freeman, the one who plays an artist."

HELPS FOR HOME DRESSMAKERS.

Mrs. Watson Breckon, Waterdown.

The art of making her own clothes is an accomplishment any woman or girl may be proud of. For those who have never tried, it seems a great task and, rather than spoil good material, it is sent to a dressmaker, thereby doubling the cost of her gown. It is to these I wish to give a few points and suggestions that may help them to overcome the many perplexities that confront the home dressmaker. In these days when one can procure such good and reliable patterns to work with, the troubles of the home dress maker are greatly lessened.

It is well to shrink most goods before cutting. The best way to do this is to lay the material out on a table, cover it with a cotton cloth wrung out of cold water, then roll the goods and lay aside for several hours, till the whole is thoroughly wet. Then unroll and either hang up to dry or iron with a not too hot iron.

Great care must be taken in cutting material with a nap, as in broadcloth and camel's hair, else the goods will shade. To find which way the nap runs lay the goods on the table with the right side up, then rub the hand lightly up and down over the surface of the material. When the hand moves down the goods the same direction as the ends of the fibres, the goods will appear smooth, but, when the hand is moved in the opposite direction, the goods will appear rough. Cut all garments with the nap running toward the bottom, as the material will wear better, and will shed dust and rain much more readily.

The best style of pattern for a beginner to use is a "shirt waist suit" pattern, with a gored skirt and a rather plain blouse. Select a pattern as near your own size as possible; never order one too small, as it is easier to take in a seam, than to add one. Order skirts by the waist and hip measurements and blouses by the bust measure. If one is inclined to be stout, a pattern with a number of gores, say nine or eleven, will fit the figure, and look better than one having a fewer number of gores, as the lengthwise seams tend to narrow the effect, and suggest increased height; for a person with a full abdomen the front gore should not be hollowed, but should be cut straight across. A circular skirt is not becoming to a stout figure.

In opening your pattern, if you find the skirt much too long, lay a tuck across each gore, about half-way between the top and bottom of the skirt. If too short, cut through the pattern, and insert a piece of paper to make the pattern the desired length. The idea in doing this is to keep the skirt equally full at the bottom and having the correct curves.

After you have tested your pattern as to the size, and read all printed instructions regarding the different markings and perforations, spread out the goods and lay all the pieces of the pattern on it, never cutting a single piece until the pattern is all laid on the material and carefully pinned in place, making sure that each piece is laid on the straight grain of the cloth, and so that the nap will run down when the various pieces are put together in the garment. Mark all perforations, either with chalk or tailor's tacks. Cut out each piece the exact shape of the pattern. Carefully notch the edge of the goods to correspond with the notches placed on the edge of the pattern. These notches not only tell which pieces are to be joined together, but they also tell how they are to be joined. If the notches are not placed in the goods as they are in the pattern, and then kept exactly together in joining the pieces, the whole garment will be out of balance, and it will be impossible to fit it. Having the gores of the skirt all cut, pin them together with the corresponding notches matching, then baste the seams carefully, not using too long stitches. Keep the skirt on the sewing table as much as possible, so as not to muss the goods nor stretch the bias seams of the gores. After basting all the seams of the skirt together, sew it to the belt loosely, not full, but easy. Then try on the skirt. If no alterations are to be made, rip open the back seam, if the skirt is to fasten up the back, or the side front seam, if the skirt is to fasten up at the side front. Stitch and press the other seams, leaving the stitching of the seam where the opening is until the plackets are finished, the belt adjusted, and any trimmings sewed on the skirt, it being so much easier to adjust trimmings on a flat opened skirt. Sew up the seam of opening, sew on belt, try the skirt on and measure for the correct length, either hemming or facing the bottom and finishing with braid.

If any alterations are to be made around the hips or waist, if the skirt should be too large, do not pull this extra fulness around the hips back to the pleat at the back, as it gives the skirt a drawn appearance, but take a proportionate amount in each seam.

Do not have the skirt fit too tightly around the hips, else it will rise up and form wrinkles below the belt. The skirt should hang from the waist line, and fall easily over the hips. To fit a gored skirt well, you must carry your lines perfectly straight from the waist to the hem, always remembering to keep three points straight, viz., the centre front, centre back and sides.

The important points to remember in cutting a waist are the bust measure, neck, length of under-arm seam, and arm-hole. Have a generous width of chest. Before cutting waist, make what alterations are necessary in the pattern. Take a tape line and measure your shoulder from the base of the neck to just over the shoulder-bone, from high up under the arm to the waist, from the base of neck to waist-line in front and back, across the chest and shoulders, and compare these measurements with the corresponding parts of the pattern. If the pattern is too short at shoulders, allow the extra amount by cutting the material a little distance from the edge of the pattern next the arm-hole. If it is too short-waisted, cut across the pattern about two inches above the waist-line and insert a piece of paper. If the pattern is too long at either of these points, leave the shoulders as they are, as they may be trimmed out in fitting, but fold a tuck in the pattern about two inches above the waist-line.

In cutting a waist, always cut the neck and arm-hole smaller than the pattern, not trimming the required size till after the first fitting; many waists are ruined by having the neck and arm-hole cut too large at first. After cutting all the parts carefully and snipping the notches, pin together with corresponding notches, exactly matching, baste and try on. If the waist is too large across the bust, take it in an equal amount at each under-arm seam. If the neck is too high, do not cut the goods away, but snip it with the ends of the scissors till it fits easily around the base of the neck. If it wrinkles at the base of the neck between the shoulders, it may be too narrow; snip the neck at each side of the centre-back. If the neck is too large, it can possibly be remedied by taking up the shoulder seams, but a too large neck is about the worst fault a waist can have. If the arm-hole is too tight, just snip it in several places till it fits easily. See that the shoulder seams fit truly, and extend the length of the shoulder. If they drag they are usually too long, and instead of coming just to the shoulder-bone, they droop down over, giving a very untidy appearance to the waist. Cut the collar band on the length of the goods, either a straight band or slightly curved; fasten it to the neck of waist so it will set easily around the base of the throat. If the waist fastens in the front, the right side of the band must be an inch or two longer than the left side, according to the width of the front pleat.

If the sleeves are too long, lay two small tucks across the pattern, one above and one below the elbow. If too short, cut across the pattern and insert pieces of paper to make the required length. In putting the sleeve in the arm-hole, keep the inside seam straight down the inside of your arm; do not make the mistake of putting it too far under the arm-hole, as this means a twisted, crooked seam.

In adjusting the fulness around the waist, do not pinch it together into a small space in front, but let it fall naturally from the shoulders. If the material is bulky cut it only to the waist-line, and add a peplum, thereby diminishing the size of the hips.

HELPFUL HINTS ON PLAIN SEWING.

Miss M. V. Powell, Whitby.

Stitchery was a handicraft in which the Englishwoman used justly to pride herself. She was an adept at it, and it would be a matter of credit to the women of the present and future generations that they do not allow it to decline.

It was an art of which they had every reason to be proud, and which might have been more and more developed, but was regarded as too homely an accomplishment in the days when women were developing as art students, professionals, etc.

We are now, happily, learning to treat it as an art, and not merely as something every woman can do. We hope the day is not far distant when every girl will be taught to wield her needle as cleverly as she now does her pen and her hockey stick or tennis racket.

The exhibition of needlework by the Domestic Art Departments of our Colleges includes whitewear made by hand or machine, shirt waists, hemstitched towels, as well as centrepieces, doylies, table linen carefully monogramed, and towels with prettily scalloped ends, so that the girl who can make only fancy work is likely to be classed with the girl whose cooking accomplishment means only making maple cream or salads. If the women of Canada are to keep abreast of the times they need to be expert needlewomen. The fact that we no longer weave or spin and make all the clothes does not excuse us from knowing how to mend and do plain sewing. It is the duty of all mothers to see that their girls are taught to take proper care of their wearing apparel, which includes mending and making.

Our mothers used to pride themselves on their housekeeping and fine needlework. Let the present generation add to its list of real accomplishments the art of plain sewing. There is scarcely a busy home mother in the land who has not at some time or other felt how much easier it would be to do all the work herself than to attempt to teach the child to assist her. But it seems almost the right of every little girl to be taught to sew neatly, even if it does cost the mother some self-sacrifice.

Very few grown women are wholly exempt from ever using a needle; on the contrary, almost every woman must take more or less care of her own wardrobe, even if she has no responsibility for that of any one around her.

Machines cannot sew up rips in gloves, replace missing buttons, or make or mend without any needlework by hand. Some stitches must be taken, and how to sew neatly is an accomplishment quite as important as any other. If a girl be early taught to use her needle, it very soon becomes second nature to her.

Every woman with a good foundation of the knowledge of plain needlecraft and a reasonable degree of executive ability can modify and arrange and beautify her personal appearance at but slight expenditure, and at the same time gain the knowledge that she is as becomingly and artistically gowned as her more wealthy sisters.

The first essential is, above all, thoroughness. Neatness, care, and exactness are requisite to be successful in attaining any degree of perfection, and every girl should know how to use her needle artfully and in the making and mending of her own wardrobe.

Above all, then, thoroughness; if it be no more than working buttonholes, make up your mind to work the best buttonholes that buttons were ever slipped through. To ascertain the size of the buttonhole put a piece of card beneath the button to

be used and cut it an eighth of an inch on either side beyond. To work the buttonhole in ordinary household or personal wear, hold the goods with the outside edge towards the left hand, then, holding the hole firmly between the left thumb and finger-top, sew closely around the opening, commencing at the right hand side and working to the left, as shown in Fig. 1 A. Turn the work and continue around the opening to the commencement, then place the left thumb close to the opening and insert the needle under the goods, taking up four or six threads, throw your double thread around under the needle to the right, as in Fig. 1 B, and draw the needle

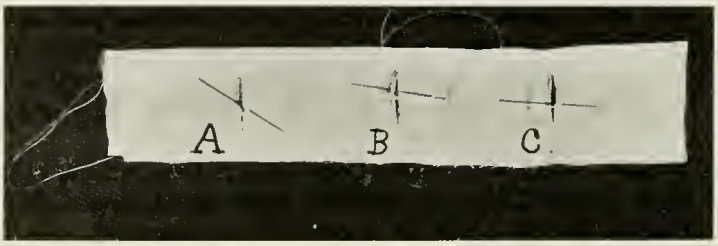


Fig. 1.

through, pulling the thread up to the opening, not down, as you draw it through, continue around the first half of the opening; now turn the work around so that the unworked portion is towards you, insert the needle as before, and throw the double thread under the needle to the left, as in Fig. 1 C and draw the needle through as before.

In sewing on the buttons put the stitches in horizontally; if perpendicularly, they are likely to pucker the goods and draw it up.

To young home sewers who want to do their best and look their best always—about the cutting and fitting of shoulders and sleeves. My young friend, if you wish to have long shoulder effects, and you will persist in dragging your shoulder seams down over the tops of your shoulders, you must expect to have a queer looking affair for a shirt waist. And how round-shouldered and short-waisted it makes you look in the back. If you cut the shoulder seam so long that it turns the top of the arm, then, when you put the sleeve into the armhole, it should be arranged with a little fulness, else the plain flat top of a tight sleeve in an unlined blouse will twist on the arm, and wrinkle under the arm.

Measure from shoulder to elbow and from elbow to wrist of the arm before cutting, then lay the measures on the sleeve pattern you have and lengthen or shorten accordingly. Place the front seam of the sleeve two inches in front of the under arm seam. With the straight of the upper top to the shoulder seam, hold the sleeve toward you in basting, and you can then adjust the fulness without difficulty.

To prepare for gathering use a double thread, the length of which should be determined by the portion to be gathered. Divide the material into halves and quarters according to its length. Begin on the wrong side and use a knot. A gathering stitch is made by putting the needle over and under a given number of threads, and is used to bring material into a small space so as to give necessary fulness to a garment. For fine, even gathering, such as is used on thin, sheer materials, take up four or six threads and skip the same, as in running. See Fig. 2 A 1. For other materials take up four threads and skip eight, making an uneven running stitch. This gives the appearance of long stitches on one side and short

ones on the other, as in Fig. 2 A 2. When finished, cut the thread at the eye of the needle and make a firm knot at the end. Draw up the gathers, pushing them firmly towards the right, as in Fig. 2 B. Insert a pin in the goods at the left end and wind the gathering thread around it. Pull the gathers down to prepare for stroking. Stroking is done by holding the gathered piece in the left hand; put the head of a coarse needle in between each gather and draw it down on the goods, pushing each little plait thus formed under the thumb of the left hand.

A band is a straight piece of material cut the way of the selvedge, and is used to confine gathers to a limited space, also to strengthen and keep garments in place. Adjust the gathers to the band with the right side of the material to the right side

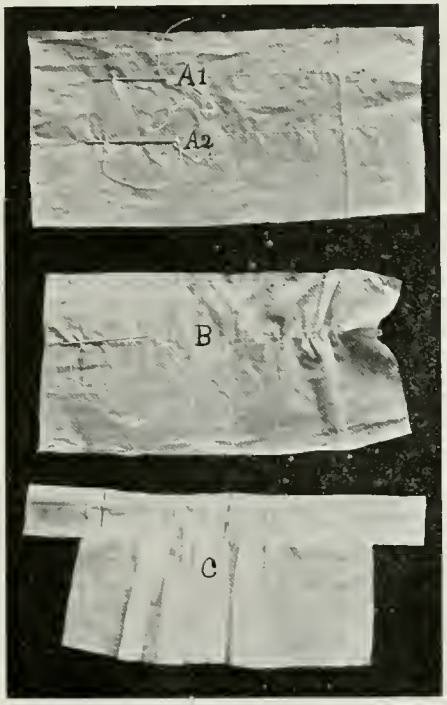


Fig. 2.

of the band, so that the fulness will be evenly distributed, as in Fig. 2 C. Baste it over the gathering. Thread with a running stitch, then hem the band over by turning in a narrow fold on the two short ends and on the long edge of the band over just enough to cover the seam, and baste into position. Hem down over the line of stitching, but do not allow the stitches to show on the right side. Stitch on the machine for a finish. There are two ways of putting gathered material on a band—by stitching and by hemming or overhanding.

A tuck is a fold made on the right side of the material and held in place by sewing. There is, perhaps, no other form of what is generally termed plain sewing which is used for a greater variety of purposes, both practical and ornamental, than is tucking, and every mother knows the value of being able to "let out a tuck" to lengthen the garments of the small daughter who is shooting upwards like the proverbial weed.

On underwear, tucking is almost invariably used either by itself or in combination with lace or embroidery, and it is impossible to find a more effective means of trimming, and which in these modern days is very quickly accomplished on the sewing machine. A tuck requires twice its width, and a gauge is used to insure evenness. To make tucks, such as are used when hems are the finish, measure above the hem three times the width of the tuck, fold the material back and crease along the thread, measure with a gauge, baste and stitch. Tucking may be made in all sorts of ways, in regular even widths, such as is shown in Fig. 3 A, or for more fancy trimming it can be done in clusters and is very effective, as in Fig. 3 B. Even the tiniest of tucks may be made on the sewing machine, such as is shown in Fig. 3 C, and really cost but little, as only a little extra material is required. The threads at the end of the tucks should be tied on the under side of the material.

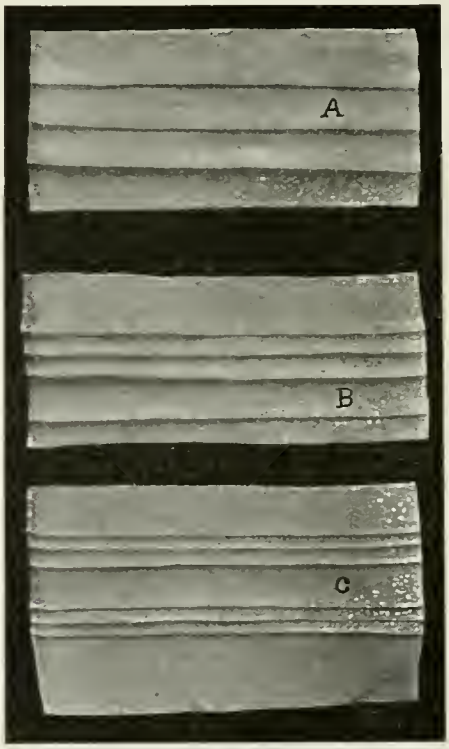


Fig. 3.

To put hooks and eyes on a skirt, place the eye on the upper side of the band with the loop part at the end of the band; hold firmly in position and sew over and over or buttonhole the little rings to the material, covering the metal. Fasten the eye down on both sides firmly. To put a hook on, place the hook on the under side of the band a quarter of an inch from the end opposite the eye, and sew in the same manner as the eye.

Whipping is only used on thin materials. It is done by overcasting a rolled edge and drawing up the thread. For a hemmed ruffle, roll toward you the upper edge of the material into the smallest possible coil with the thumb and first finger of the right hand. After getting it started, continue with the left hand, then over-

cast from the right end. Draw the thread up with very few stitches (Fig. 4). A whipped ruffle should be twice the length of the space to which it is to be sewed. Hemming is one of the arts of the needle, and requires care and practice, a carefully selected needle and thread, and a patient worker to attain any great degree of success.

The collar or neck band is a most important feature of the garment. To adjust it correctly, hold the garment towards you, the collar or neckband from you, tack the centre of the neck of your garment to the centre of the collar or band and baste carefully. When stitched turn the collar over the garment and hem down to the inside of the garment to prevent rough edges from irritating the wearer. Then stitch on the machine to give it a finished appearance.

Some may think basting an unnecessary part of their work, but in nearly all plain and fancy sewing it is a very important and necessary part of successful work, and should be neatly and carefully done.

Let me add a word upon the value of the flat-iron; so many home dressmakers ignore the existence of the iron, and many an otherwise well constructed garment has been spoiled for the want of its use. Each seam of a cloth garment, as soon as it is sewed correctly, should be pressed, and the completed garment receives its

Fig. 4.

finishing touch from the flat-iron. A necessary word of caution is: Do not allow the garment to be stretched while pressing. Let the iron be moderately heavy and lay a clean cloth over the part to be pressed; press, do not iron your garment. That is, lift the iron when moving it from place to place on your garment instead of rubbing it up and down and crosswise. Be careful that your iron is not too hot, or it will mar the texture of your material.

A seam-presser may be made out of a piece of curtain-pole or broom-stick. Let it be ten or twelve inches long; roll evenly in flannel and cover with muslin. This is a great convenience in pressing sleeves. When pressing plaits which require to be basted into place, use very fine thread, as a coarse one is apt to leave its mark in the pressing.

There are numerous other important points in connection with plain sewing that are necessary for the home-worker to make herself mistress of, so that she may know she is capable of undertaking a piece of work and doing it satisfactorily.

Whatever branch we take up—the dainty white wear, the simple shirt-waist, or the family mending—let us remember that the best is none too good, and time spent in the endeavor to make each stitch more perfect than the last, is but leading to that goal which we are all striving to reach, the reward which comes to those who have succeeded in doing their very best.

MEATS—CHEMICAL COMPOSITION AND COOKING.

Miss Hattie M. Gowsell, Foxboro.

"Here's to the housewife who's thrifty."—*Sheridan.*

The subject of cooking is one which has been emphasized, the importance of which is as essential to-day as in the past. Few realize the necessity of retaining natural flavors in foods, especially in meats. The highly developed sense of taste, the appreciating of fine flavors, is a real art. As art requires considerable time to be perfected, it becomes the responsibility of the home-maker to present food so prepared that the taste of the child will be properly trained.

Custom has caused us to think chiefly of beef when considering meats. This is, in reality, one-sided, as meats include veal, pork, lamb and mutton. The heart, kidneys, liver, tongue, etc., should receive attention also.

When marketing the housewife should consider the cuts of beef to be used for that day. Is a stew or a steak to be purchased? From which part of the beef shall either be cut? Where can the best be obtained, amount of food considered, at the smallest cost?

It is a wise scheme for the inexperienced to have a diagram of, say, one side of beef. Buy these various cuts in rotation until familiar with all. Decide how these can best be prepared, and so become acquainted with the process of cooking each. Do the marketing, but not over the telephone. Do not leave the selection of cuts to your market-man, however much you may appreciate him. He is in the stand for business. The housewife should be present in the best interests of her business and the household.

Besides having a chart of the various cuts of beef, have a list of tests for good beef, good veal, lamb, mutton and pork. The following outline may be used when marketing:—

Tests for good beef:

1. Firm to the touch and a bright red color; 2, muscle dotted with fat; 3, fat a pale yellow; 4, suet crumbles easily.

Note.—The muscle from a Holstein is never a bright red.

Tests for good lamb:

1. Muscle a light red; 2, fat, white.

Tests for good veal:

1. Muscle, pink.

Tests for good pork:

1. Muscle, never a dark color; 2, fat, white; 3, skin, white and clear.

Soon all tests become familiar, and the butcher soon is impressed with the fact that he must present to the customer an acceptable article. It is natural to live up to just the demand of the public.

Consider the economical side of the business. What is the cost per pound of purchased beef? What is the amount of edible portion purchased and what is its value per pound? Is there a profitable way of disposing of bone and refuse? A few figures may serve as illustrations of the above. A roast of 4 pounds is bought at a cost of 16c. per lb. The bone and trimmings weigh 12 ounces, leaving as edible portion, before roasting, 3 lbs. 4 ozs. After roasting, the edible portion is weighed and there is found only 2 lbs. 12 ozs. There are then 2 lbs. 12 ozs. of beef to serve to the family at a cost of 64c. for materials alone, this being at the rate of 23.37c. per lb. for edible portion served; the gravy not being considered here.

This is at a much higher rate per pound than was presented to the purchaser who did not calculate on the weight of bone and trimmings, or the loss in the weight during cooking. To reduce the high cost per pound, some use for the bone and trimmings must be thought out; also gravy should be used.

Edison has been quoted as saying, after chewing a piece of tough steak, "Every cook should be a chemist." If this be true, it is necessary to know something of the composition of meat in order to treat the various parts, so the results will be satisfactory. Generally speaking, the composition of meat is as follows: fat, bone, connective tissue, and muscle containing the fibre and juice, which is water having in solution albumen, other proteids, one of which is extractives, and mineral salts. The protein or tissue-building material is of great importance, as it can be easily destroyed when the muscle is cooked. This means loss of flavor and loss of food materials. Too often a large percentage of the protein is removed in the scum when boiling meats, or left on the bottom of the frying-pan when a steak has been pan-broiled. As the tissues of the body depend upon the protein we eat, it is necessary to preserve, not destroy, this important ingredient found in meat. It must be so preserved that the body can derive the largest amount of nourishment possible. Chemists have agreed that the proteins may be divided into three classes, the principal one being albuminoids, as albumen in egg white; casein of milk; and myosin in lean meat. The chemical composition of these is similar to the composition of the tissues of the body. It becomes expedient, then, to know something of the chemistry of cooking, as well as to understand the practical part.

Already the tender and the tough cuts have been mentioned. It now becomes necessary to consider the texture and flavor of meats. Different cuts of meats vary greatly in the relative proportion of fat and muscle. According to Prof. Atwater, round (all analysis) contains 9.3 per cent. fat, while rump (all analysis) contains 18.6 per cent. fat. Again, rump—very lean—contains 19.5 per cent. protein, while rump—fat—contains 12.9 per cent. protein.

All muscle consists of tiny fibres, tube-shape and held together by the connective tissue. The fibres in young animals are tender and in those parts of older animals where there has been little activity. The muscle of the neck and legs is tough, due to constant activity. To improve the texture of the meat is an important factor. It may be accomplished by softening the connective tissue in one of two ways, viz., by heating the connective tissue for a long time in hot water, the tissue being converted into gelatin; or by immersing the muscle in a weak acid solution, as when a tablespoon of vinegar is added to one pint of water. The latter is used when an unusually tough portion is being cooked. Investigators have proved that the flank is more than twice as tough as a sirloin or a tenderloin cut.

The above shows how to treat the connective tissue that the texture may be acceptable. Parallel with this, we must consider the juice. In some instances, as in cooking tender cuts of meat, the purpose is to retain all the juice in the fibre. This is accomplished by bringing the surface of cut fibres in contact with a smoking hot surface, slightly greased. Because of the albumen (similar to egg white) the juice contains, the ends of the small tubes are sealed, as this albumen hardens when in contact with so hot a surface. All juice, for the time, is prevented from oozing out. Turn the upper surface so as to bring it in contact with the smoking-hot surface. Again the ends of the tubes are sealed. By frequently turning and keeping the pan at a proper temperature (smoking hot), the tender cut of the beef can be cooked, a desirable flavor being the result, as well as the connective tissue softened. There will be no loss of food by this method if carefully carried out, as the surfaces are kept sealed, no moisture being seen on either surface.

In reality, there are only three methods of cooking meat, the above illustrating one method, the juice being kept in the fibre. A second method is to sear cubes of meat, then cook in water slightly under the boiling point, as in stews. The third way is to extract all juice and soften connective tissue, as in stocks. Many variations of the methods may be used by the original housewife; but, after all, there are but the three methods, the idea of preserving and developing flavor and softening tissue being the aim.

Thus far the treatment of the muscle has received attention. In order to study economy of home supplies or institutional supplies, the fat, gristle, bone and left-over meats must be used.

Fat may be used in soap-making, a small quantity being combined with certain proportions of prepared lye. Another use is satisfactory when a small quantity of clarified fat is combined with some other desirable shortening for cake-making. This is acceptable when the cake is used immediately.

Bones, gristle, etc., can be used for stock which is acceptable as the basis of many soups or gravies.

Left-over meats are usually a problem; how to make them attractive and tasty at a small cost of labor, time and new materials. The temperature of all made-over dishes must be low, the period allowed for heating them considerably longer than is usually allowed. The economy of made-over meat dishes must be considered at all times, as in many instances they are extravagant.

The following "Beef" table may be of service to some young housekeepers:

Hind Quarter:

Flank: Thick, boneless.—Stuffed, rolled, stewed, boiled, corned.

Round: Aitchbone.—Beef stew.
Top part.—Steak.
Lower part.—Hamburg steak.
Vein.—Hamburg steak.

Rump: Roasts, braising.

Hind Shin: Cheap stew or soup stock.

Tenderloin: Roasted, Broiling.

Loin (3 ribs): Tip.—Steak.
Middle.—Sirloin, Porter house.
First cut.—Steaks, Roasts.

Five Prime Ribs: Roasts.

Chuck Ribs (five): Hamburg steak, Beef tea.

Neck: Mince Meat, Hamburg steak, Stew, Beef tea.

Sticking piece: Same as neck.

Rattlerand: Thick end.—Corning.
Second cut.—Corning.
Thin end.—Corning.
Navel end.—Corning.
Butt end.—Corning.
Fancy Brisket.—Best for corning; long cooking

Fore Shin: Inferior.—Soup stock, stews.

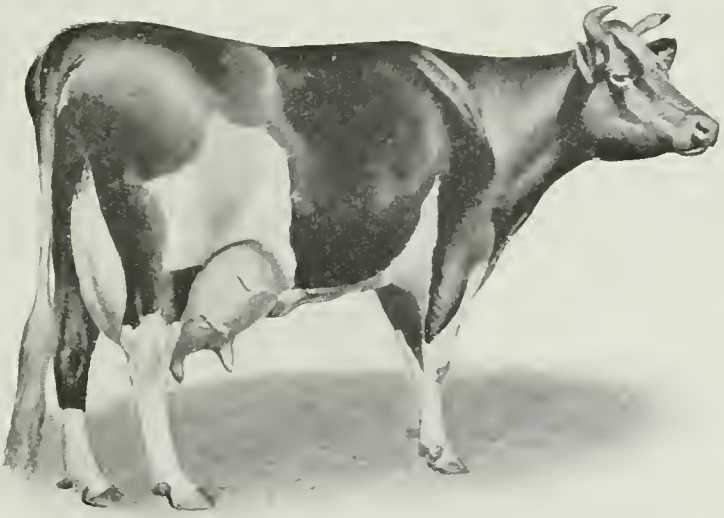
NOTES ON DAIRYING.

Miss Laura Rose, Guelph.

While the women on the dairy farms in Ontario do but very little of the work connected with the production of milk they will be interested in the features of the work outlined in this brief article.

The Stable. The health of the cows and the purity of the milk depends greatly on the stable. Four things are of prime importance—sunlight, pure air, tight, dry floors, and the comfort of the animals.

Fifteen minutes of direct sunshine brings death to most of the disease germs. When we have such a powerful disinfectant free, let us use it abundantly. Have plenty of windows in the stable. Let the sunshine get directly in on all sides,



Holstein—DeKol Creamelle, with a record of 26,280 pounds of milk in one year.

if possible. Many have the windows hinged on the lower side, and have them open inward from the top. This prevents a direct draught on the cows. Keep the windows free from cobwebs and wash them off occasionally.

The better the stable is built, the more necessity for a good system of ventilation. Up to the present time the King system of ventilation, or a modification of it, is perhaps one of the best.

When the air in a stable is good, a person can go in and out from it, and not have his clothes saturated with stable odor.

A stable should be whitewashed inside at least every fall. The lime disinfects and sweetens and brightens every corner, and adds to the self-respect of the farmer.

A durable whitewash, made as follows, may be applied to the outside of buildings and fences and will add much to the attractiveness of the place: Slake in boiling water half a bushel of lime. Strain so as to remove all sediment. Add two pounds of sulphate of zinc, 1 pound common salt, and ½ pound of whiting thoroughly dissolved. Mix to proper consistency with skim-milk and apply hot. If white is not desired, add enough coloring matter to produce the desired shade.

The Cow. It is not only the herd which must be considered, but each cow in the herd. Better a vacant stall than an unprofitable cow filling it. Be sure it is the cow's fault and not yours before you part with her. Many a good cow is humiliated because she cannot do her best in the skim allowance of food and water, and the indifferent care she gets.

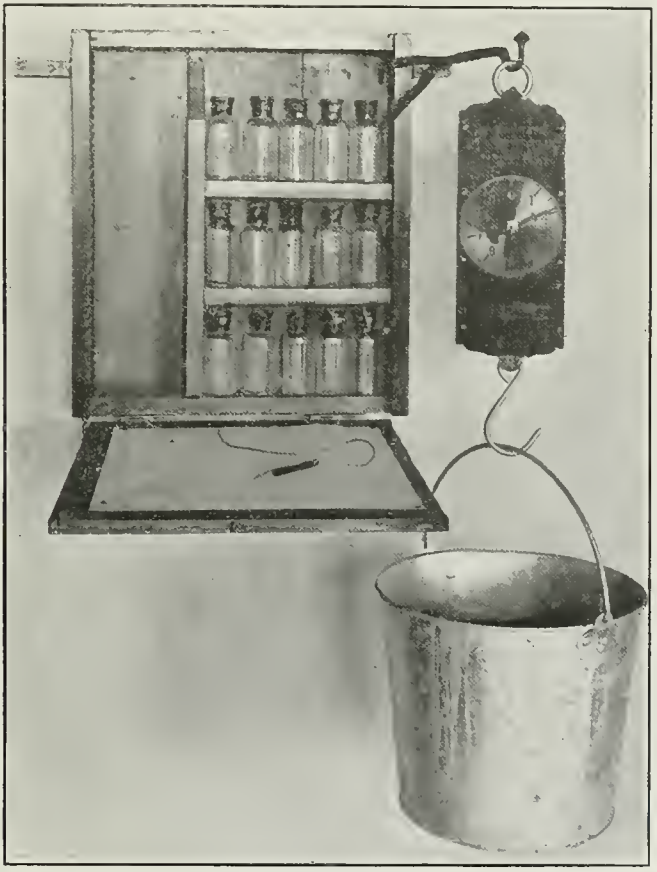
No light or ventilation; a breeding place for tuberculosis.

We must emphasize the necessity of having a healthy cow, as indicated by her readiness for her food, a full bright eye, soft pliable hair and skin, steady even breathing, and good heart and lung capacity. Then we want good milking qualities, as suggested by a strong nervous system, large middle piece, and splendid udder. She should have a quiet, contented disposition, submit quietly to being handled and should be an easy milker.

A dirty cow means dirty milk and such a cow as this means no profit.

Many farmers, as soon as a cow becomes dry, let her hunt her own living or half starve her, excusing their neglect by saying she is doing nothing for her board. Is she not preparing herself to work again every day, for ten or eleven months, besides presenting her owner with a calf?

Some stint the food, fearing milk fever. The main cause for this frequently fatal trouble is milking the cow out clean soon after calving. Only a little milk should be drawn at a time, and this should be done several times a day for the first day or two. This is as the calf would take it, and is following Nature's course. One of the best dairymen I know never touches a cow for the first twenty-four hours, no matter how distended her udder, but just leaves the calf with her.



Handy weighing and sampling apparatus for testing cows. Note the drop shelf on which the record is tacked.

If milk fever develops use the oxygen treatment. Do not exercise a cow after she calves.

The Calf. To teach a calf to drink, let it get quite hungry first, then insert two fingers into its mouth and lower its head into the pail. In feeding calves by hand, I would never be without a thermometer and some means of weighing the milk, as I would far rather let a calf go without a meal than have it get a couple of pounds too much milk, or have it get it at a temperature of 70 degrees if it had been used to getting it at 90 degrees, which is about right.

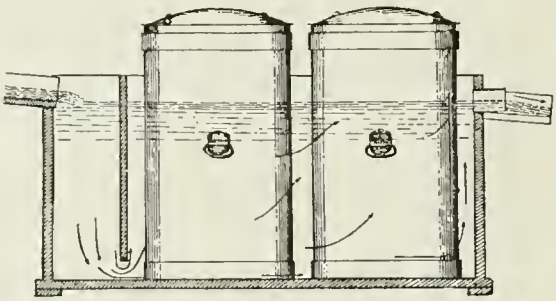
As a rule it is a good plan to feed the calf whole milk for the first three weeks. In changing from whole milk to skim-milk, do not use too great a hurry. Take at least a week to make the change, dropping a little more of the whole milk and adding a little extra of the skim-milk at each feed.

A successful dairyman, who sends his milk all off the farm, uses the following mixture to make a thin gruel as a substitute for milk:

100 pounds ground oil cake.
100 pounds low-grade flour,
25 pounds ground flax seed.

Milking the Cows. Too much stress cannot be laid upon this fact, that the making of the milk is largely completed just at the time of milking. Intelligence and kindness on the part of the milker at this time determines, to a great extent, not only the quantity but also the quality of the milk.

Children or weak-handed persons should never milk good cows. They have not the strength in their hands to press the teats hard enough to excite the nerves sufficiently to get all the milk. Poor milkers are too often the cause of the cows not filling the pail as they should.



Tank for cooling milk in cans.

The milker's hands should be clean and free of disease. Do not milk with wet hands. Dairymen who are striving to improve the purity of their milk, will take a long step in that direction by getting the hooded pails.

Do not return to the cows to strip them again. It does them no good, but rather an injury.

Straining and Cooling the Milk. To keep the dirt out, not to strain it out, is the aim of the cleanly dairyman. Every hair, straw, fly, and particle of dust, is laden with bacteria. The sooner these bacteria-carrying agents are removed, the purer will be the milk, and the better its keeping qualities. Therefore strain the milk immediately. I would not have the strainer on the pail. Several thicknesses of five-cent cheese cloth make an excellent strainer. After using, the cloth should be rinsed in tepid water to get out the milk, then washed in warm water, and lastly scalded and hung outside to air and dry.

Cooling the milk immediately after or during milking, with as little exposure to the air as possible, and putting the lids on the cans, is recommended by our Chief of the Dairy Division. When the milk is sent to a cheese factory, special provision should be made on the farm to quickly cool it to 65 degrees or lower, and for keeping it at that temperature over night and for lowering it to 50 degrees and sustaining that temperature when it is held over Sunday. Depend on nothing

but a correct thermometer for ascertaining temperatures. Ice is a necessity on a dairy farm. Rusty cans are the cause of much trouble, and should never be used.

If only the cream is sent off the farm, it should be thoroughly and immediately cooled after being separated. By sending sweet cream to a creamery, a more accurate and frequently higher test is obtained than when the cream is sour and lumpy.

Under no conditions should chemicals be used for preserving milk or cream. Cleanliness and prompt cooling are the only preservatives we can recommend.

NOTE.—Miss Rose is the author of "Farm Dairying," a work of great value to the farmer and his family and one which will be read with interest and profit by the boys and girls as well as the grown-ups. It can be secured by addressing Miss Laura Rose, Guelph. Price, postpaid, $1.35.

BEE-KEEPING FOR WOMEN.

MISS ETHEL ROBSON, ILDERTON.

In the report of the Women's Institute for 1910, there is an article by Mr. Morley Pettit, Provincial Apiarist, O. A. C., Guelph, on "Bee-Keeping for Women," in which he points out in a general way the possibilities in this field of economic endeavor for women. A few suggestions regarding the practical working out of the problem will be of value at this time.

Taking in honey.

My qualifications for the task are that I have kept bees with at least enough success to prove that a woman can run an apiary, and that, beginning in a small way, I have come up against most of the difficulties which are likely to confront the intending bee-keeper. Now, at the start, let me say that, unless a girl has a fair share of perseverance, or the grit to develop it, there is no use in her attempting bee-keeping as a means of livelihood. It is a work which requires constant

watchfulness, and, unless these qualifications are brought to bear, it will prove entirely disheartening and disappointing. And more than this, with the present prevalence of contagious disease among bees, the careless bee-keeper will not only carry on her business at a loss to herself, but will be a menace to the whole neighborhood, and, as such, is dreaded by all apiarists who are depending on their bees for a livelihood.

Of course the first difficulty which appals the enquirer is the sting. There is no doubt that bees do sting, equally there is no doubt that it hurts, but you get used to it; besides, after a certain amount of poison is received into the system, the entailing after-effects almost entirely disappear. There is a genera belief that bees come to know people who work with them and will not sting them; there is little to be depended on in this, for, while you do learn how to work with them and not stir them up, you may always expect to have to take a certain number of stings. The use of the smoker is a great help in preventing stings. A few puffs of smoke at the first shock of opening the hive usually serves to make them sufficiently quiet to handle easily. It might be well to mention here that the strain of bees makes a great difference. I have seen bees so cross that I wouldn't have them in my yard at any price. It must also be remembered, too, that there are a few people to whom the sting of a bee is so virulent that it would be most unsafe for them to attempt to work among them.

The next difficulty is the swarms. The traditions of the old box hives constitute most people's knowledge of bees, and swarming, as they remember it, is a wild confusion of pan rattling and tree climbing. It is generally believed that bees have to swarm, which is, in a measure, true, as no one has yet succeeded in eliminating the swarming impulse. However, in running for extracted honey, with proper management it can be cut down to an almost negligable factor. In my own yard of seventy-five colonies, while securing a good crop of honey for the season, I had this year only about half a dozen swarms and even these were due largely to lack of the necessary time to give them the needed attention just when it should have been given; whereas, some neighbors who keep bees by old fashioned methods and run for comb honey have had a swarm from every stock. Now how can swarming be kept down? With us all queens are clipped in the spring. There are a good many small bee-keepers who have never seen a queen and it seems to them a very difficult operation to find her in that boiling mass of bees. This does take a little time, but it well repays for the trouble, and, as the queen can get along without her wings quite as well as with them, nothing is lost and you have the satisfaction of knowing just what sort of queen you have in the hive. Clipping also enables you to keep track of the age of the queen, which is of considerable value in re-queening.

Now in case you have been negligent and some warm morning you see a swarm issuing from a hive, all you have to do is to lift the old hive from the stand and put another one in its place, filled either with combs or foundation, and with a card of brood in the centre to keep the bees contented. The old queen, being unable to fly, will usually be found in front of the hive; if not, she can soon be found in the old hive and caged. In a little time your swarm, not having a queen with them, will return to the old stand, when the queen is then released and allowed to run in with them and then you have your swarm hived without any trouble. But there are some disadvantages in letting them swarm this way; the queen may be lost, or the swarm, finding itself queenless, may in its excitement be attracted to other hives where there is some commotion, and thus a good many bees be lost. It is much better by proper manipulation to keep down the swarming

fever as far as possible. This is done by seeing that the bees have plenty of room and ventilation, giving them shade and keeping good young queens in the hives. By the aid of a regular weekly inspection, conditions can usually be kept such that there will be little desire to swarm.

If swarming is to be kept down, it becomes necessary to raise a number of young queens by artificial means, in order to keep a vigorous queen at the head of each colony. This is not difficult work, although it does require a good deal of care and attention, and it is very fascinating, besides providing a pleasant variety. One of the illustrations shows the writer examining a batch of queen cells.

As running for comb honey results in a great tendency to swarm, it will be wise for the woman who is going into bee-keeping on an extensive scale to work for extracted honey, at least on the start. We often hear the term "strained honey" applied to this article. This, however, gives an entirely erroneous impression. This term arose under old methods, when the bees were smothered in the fall and the honey strained from the mass left in the hive, the resulting product being anything but palatable to think about. A good many people prefer comb honey to extracted, but, whenever honey becomes a staple article in the home, the extracted article usually takes first place, as it is much cheaper, more digestible, and can be used with much less waste. But to create and keep up a demand for it, it is necessary that a strictly first-class article be provided, and, if this is done, there will be little difficulty in finding a market at remunerative prices.

Now as to the means of securing the best quality of honey. Extracting supers should be provided for all hives, as honey should never be taken from the brood chamber for market purposes; also queen excluders, which are pieces of perforated zinc the size of the top of the hive, which prevent the queen from reaching the extracting combs to deposit her eggs, but permit the workers to pass freely back and forth. If any dandelion or apple blossom honey is placed in the supers by the bees, this must all be extracted before the clover flow begins, else it will spoil the flavor of the main crop. The honey must be left with the bees until it is ripened—that is, until it has been nearly all capped over, otherwise it will be thin and watery and liable to sour. There is a certain amount of late honey which the bees will never cap, but after this has been in the hive a certain time it is all right to extract.

There is a great difference in neighborhoods as to the flavor of the honey produced, this depending largely on the flowers, and it would be wise in locating an apiary to take this into consideration. Clover and basswood provide the standard honey, while mustard will spoil both color and flavor. When there is any profusion of bloom, other than clover and basswood, it would be well to enquire carefully as to their honey value before locating.

For extracting it will be necessary to have a room which the bees cannot get into. The combs are freed from bees, either by brushing them off or by means of bee-escapes, and carried into the extracting room, where they are uncapped and placed in the extractor, the honey being removed by centrifugal force. The honey thus obtained is a clean, palatable and inviting article, very different from the strained honey of our grandmother's time.

There are two methods of wintering bees practical at present, in the cellar and in double boxes outside. The latter is growing in favor, and is, undoubtedly, the most satisfactory for a woman to use. Sometimes the wintering cases are left in all summer with the packing undisturbed to the height of the brood chamber. The hives are not quite so convenient to work in this way, but it saves a good deal of

other labor, besides providing the necessary shade during the summer. If a convenient place for storing the packing is available, it makes things much better to remove it all. For packing, any available porous substance may be used—forest leaves, chaff, planers' shavings, and even sawdust. In my yard I use flax chaff with a good deal of tow remaining in it to hold it together, which makes it very nice to handle. At the O. A. C. they use planers' shavings. I saw the bees unpacked last spring and the hives certainly came out in nice condition.

Looking for a Queen.

Now, a word as to the dress to be worn. I just wear the ordinary clothes which I wear about the house, with the addition of a bee-hat and veil. To make this, I sew a curtain of muslin or tarletan about the rim of an ordinary straw hat; in front, a square of wire netting is inserted, attaching this to the hat at some distance from the edge, in order that there may be enough of the rim projecting to shade the wire; an elastic band or draw string is run in the bottom of the veil to bring it up snug around the neck. This makes a cheap, durable, and efficient bonnet. If the hat does not come down over the head, it will not be so warm and can be kept steady with a hat pin. For ordinary use, the wire netting is really more satisfactory than a silk net, as it remains steady and consequently is not so trying on the eyes. I always wear high shoes to keep the bees from stinging my ankles, but never anything on my hands. No self-respecting bee-keeper would wear gloves. You feel that you need your hands perfectly free to do your best work.

There is one point that must not be forgotten, that of feeding for winter. A colony which has given you a good surplus will rarely have the necessary stores in the brood chamber to carry it through the winter and will have to be fed. A colony low in stores, even if it does get through the winter all right, will never do good work the following year, as the queen is handicapped in the spring by a shortage of food for young bees and will not lay to her full capacity. Indeed, experienced bee-keepers have found that bees will winter better on sugar syrup than on honey,

so that it really pays to feed, whether they have the necessary stores or not. Syrup made from the best granulated sugar, in the proportion of two parts of sugar to one of water, is the proper thing to use, and should be fed some time in September, that the bees may have it sealed for winter use. There are various feeders in use, but nothing perhaps more satisfactory than a two-quart jar with a perforated top, or a ten pound press cover honey pail, with holes in the cover, turned upside down over the cluster.

Now, of course, the main question for anyone going into bee-keeping is what are the profits likely to be. This will depend very largely on the season, but there is no reason that, when once established in a fair neighborhood with, say, 100 colonies of bees, they should not net an average of $300 or $400 per year. My own will do this this year. It depends on business ability, and the chance of securing help when needed, how much beyond this you can go, for there is really no limit. And, more than this, it is a business which from the start will pay for itself, besides leaving a nice margin of profit. But the pecuniary returns are not the only profits of bee-keeping. It is a fascinating, absorbing, and healthful work, and, for the woman who has a taste for it, will yield more of the real joy of living than any other out-door occupation for women that I know of.

THE CLEAN MOUTH LEAGUE.

Mrs. Harry W. Jackson, Secretary, Kemptville.

By our words we are known. Speech is the medium of communication between mind and mind, and, necessarily, man's greatest power for good or evil; and, if a man's speech is evil, who can tell the cumulative amount of his daily, hourly influence for evil on all those who have the misfortune to hear him. He is like a poisoned spring, spreading disease with irresponsible prodigality.

We have become so accustomed to hearing bad language that many respectable people fail to grasp the enormity of it. They shrug their shoulders and say, "Yes, it's a bad habit, it's a pity!" and think they have fully dealt with it. A bad habit, indeed! Who can say of what evils it is not the seed! Take for example the filthy words that you may hear if you mix with the current of an outgoing school. What are these words doing? They are making natures coarse and dead to refinement and beauty; they are feeding the imagination, leading it along vicious lines that tend to the lowest depths if not checked and counteracted. The white slave traffic is one of the full grown plants from these seeds.

We are accustomed to think of our beautiful Canada as we often see her represented in political cartoons, personified by a fresh girl with infinite possibilities before her. What a shock it would be to hear this girl speak in coarse, unclean or even profane language! Yet this language is often heard among her people.

The sin of blasphemy—that is, the improper use of the names of God, was punishable by death in the Mosaic Law, and was classed with murder. By our law it is punishable, and we have it in our hands whether or not we will allow the air of our public places to be polluted by profane language.

The standard of the character of any nation is just as high as its conception of its God.

The impression made upon a child before the age of seven will be more lasting and formulative than anything that can come to him later.

Let us put these two thoughts together. What conception does a young child get of "God," "Jesus Christ" and the "Holy Ghost" in the majority of our homes before the age of seven? The answer to this question will largely help to determine what the full grown character of future Canadians will be. In some homes, unfortunately, a child first learns to connect these holy names with roughness, anger and punishment. Soon the habit is formed by imitation in the child and he becomes a confirmed blasphemer. Little children may be heard in our streets and at their play using these holy names mixed up with all the filth they can bring together.

On "Frances Willard Memorial Day" in February of this year, a society was formed called the "Clean Mouth League," whose aim is to clean the speech of Canada. It has a pledge card and its active members pledge themselves to avoid blasphemy, profanity and coarseness of language, and to use their influence with others to bring in cleaner speech. Those who feel they cannot go so far as to promise this at first, are enrolled as associates, if they are in sympathy with the movement and wish to help it forward.

It is a big thing to try to stamp out bad language from our country, but it is not an impossibility. Throughout Canada there are big organizations, such as Women's Institutes and the W. C. T. U., also the organizations connected with churches, colleges and schools; and if all men and women whose loyalty to God is a reality, and who have the future of their children at heart, will band together in this movement with one united sweep from ocean to ocean, thy must win the day.

Women of Canada, is it not time we were up and doing all in our power to prevent this great evil that is growing upon us and undermining our national character? It is the women who must lead. First let them see that their own conversation is free from coarseness, and then they can protest against the bad language they hear. When a woman is choosing her companion for life, she should beware of a man whose words are not right, and, above all, she should not choose such a man for the father of her future children.

But, besides this, it is time to make aggressive warfare against this thing; especially should it be carried on in schools where the young generation is being trained to live its life. If bad language were put down with a firm hand by the authorities in schools and colleges, the result on the whole population would soon be evident. Let us so train the public conscience that it shall at least be a shame and disgrace to use profane and indecent speech—a thing to be loathed and despised—instead of its being boldly shouted in our streets and playgrounds.

But we must not only break down, we must build up and strengthen. Let us teach our children reverence for all that is high and noble; let us cultivate their sense of the beautiful and sublime: let us give them high, pure ideals, and, above all that "Fear of God," which "is the beginning of wisdom."

Self-control, too, is another point which bears upon language. A man who has not self-control is not worthy of respect from his fellows, and a great deal of bad language results from want of self-control. By setting control over one's speech one gains control over the whole character. Another reason for the use of wrong words is poverty of language. Some people have a very poor vocabulary and very little power of expressing their feelings without the use of strong words in an improper sense: thus bad language shows general lack of intelligence.

The "Clean Mouth League" leaves the development of each branch to the local honorary secretary, upon whose devotion and ingenuity the character of the

work of the branch largely depends; but periodical reports should be sent to the centre, showing the growth of each branch, so that a good general idea can be obtained of the work of the League as a whole.

Women of Canada, let us unite in one great effort to uphold the honor of God's name, and to eradicate the evil of bad language from Canada for the sake of our country and of our children.

SOME LAWS WHICH CONCERN WOMEN.

Mrs. Horace W. Parsons, Forest.

It is obvious that in a short paper, a subject of this nature can only be dealt with in a very cursory and primary way, so I shall only mention a few of the points that most nearly touch home.

The laws pertaining to marriage in Ontario do not permit the issuing of a license or certificate to anyone under the age of fourteen years, except where a marriage is shown to be necessary to prevent the illegitimacy of offspring. At the age of eighteen, marriage without the consent of parent or guardian is allowable in this Province. With the exception of New Brunswick and Manitoba, the other provinces have decreed that contracting parties must be twenty-one years of age; and it would surely be for the common good to have the age limit raised in Ontario also. The law does not evidently consider a person to have come to years of discretion until he is twenty-one in other respects, so why make this vital question the one exception? In this strenuous age of keen competition, a boy of eighteen is, generally speaking, not in a position to maintain a wife, nor is his judgment sufficiently matured to enable him to choose those qualities in a woman that will assure him the best happiness in his home: at eighteen, a girl is at a romantic age, and is apt to be carried away by the flattery of the first proposal of marriage and mistake the passing glamour of it for the real love that her heart is capable of, a love that should grow and deepen with the passing years; again, at this early age she runs a risk of proving a failure both as wife and mother from a physical standpoint. In questions of this kind, it is wise to put the matter to ourselves, "Would I want my boy or girl to contract a marriage entirely on their own responsibility at this immature time of life?" Decidedly "No." Then it would be wisdom to make a change.

If these young people are under eighteen years and wish to marry, whose consent have they to ask? Their father's only, if he be living. A married mother has no position in the eyes of the law, the father is the sole guardian of all children born in marriage, all powers reside in him, he alone fixes their education, their religion, their profession. Consider the proponderating share in rearing the child which nature has entrusted to the mother and the importance of the child to the mother, and the iniquity of this arrangement is glaring. We want a simple declaration of the equal guardianship of the fathers and the mothers of their familis. New South Wales legislated for this last year. With the exception of Quebec, all the other provinces make divorce permissible. In Ontario there is no Divorce Court, so that a person, desiring to be freed from his or her unhappy bonds must appeal to the High Court of Canada, entailing enormous legal cost, unless one can appeal as a pauper. While opinions differ widely as to under what conditions marriage may

be dissolved, it is generally conceded that the present system is unfair. The man has only to prove that on one or more occasions his wife has been unfaithful, while she, in addition, must prove desertion and cruelty, and what constitutes cruelty depends on the viewpoint of the judge in charge. Some would advocate divorce on the grounds of habitual drunkenness, lunacy, cruelty, confirmed drug habit, and, possibly, for conviction of serious crime which brings the family into public disgrace. But it is certain that, if the sanctity of the home is to be preserved, laws should be made and enforced to that end, and the husband and wife should be placed on an equality, and unfaithfulness be made a sufficient ground to entitle either sex to divorce.

In Quebec, separation is procurable, and the man may get it on the simple statement of his wife's wrong-doing, but the law demands of her that she prove, not only her husband's adultery but that he had brought the partner of his guilt under their common roof and lived with her there as such. Evidently here, a man, if he so choose, may be a disgrace to his family and to his community and live a life of open shame, but, as long as he does not violate the four walls of his home, his wife may not ask to be freed from her fetters, for such the ties that bind her must have become.

The unmarried mother, on the other hand, is the only parent of her child in the eyes of the law. She is responsible to the state for its life, its maintenance and its upbringing. It is she who alone bears the shame, who is the outcast from society, and, on account of her lost character, her hope of future employment is small; while her companion in guilt, who probably was the greater sinner, is never mentioned, for the law does not seem to punish men in such cases—in Ontario at least.

In New Brunswick the father of an illegitimate child can be made to pay one hundred dollars at suit of Alms House Commissioners, and in Nova Scotia he shall be liable to contribute to its maintenance and education until it is fifteen years of age.

In Norway they have legislated that, if the father of an illegitimate child does not pay alimony, he shall be deprived of his vote. In that country, unless a man is willing to do what he can to repair the wrong he has done, he is not considered worthy to take his place as a citizen.

We mete out punishment to a man for stealing a loaf of bread which can be purchased for five cents, and apparently ignore the weightier matter of a woman's well-being. It does not seem just to woman or society to leave conditions as they are here. We want no anæmic moral code; neither do we want Canadian honor to be a plant of scanty growth!

Any woman may own and administer property anywhere in Canada, except in Quebec, where there are some restrictions, and she may also make a will. In Ontario she also has some claim to share in her husband's landed property. This is the provision known as the Dower Act, by which, if the husband dies intestate, she has $1,000 and half his estate under certain conditions, if there is no family. In the event of a family being left, the widow then has a third share, the children falling heirs to the two-thirds. However, if a woman sign away or bar her dower, she forfeits her right to the dower portion. If a husband by will should leave to his wife a smaller apportionment than she would have had as dower, then she may choose which she shall accept.

In regard to the franchise, Canadian women have neither federal nor provincial privileges, but, in municipal affairs, widows and spinsters who are ratepayers have the same voting privilege as men, but are not eligible for office. The school

franchise is also given to women ratepayers in all the Provinces and, with the exception of Quebec women, they may serve as trustees. In Ontario this privilege is extended to married women who are ratepayers to any extent. Our Legislature recognizes that the interests of the school and the home are very near together, and it is deplorable that so many who might use their influence for the good of the school neglect to do so.

In this brief statement of bald facts, it will be seen that while there are many undesirable laws which govern us and much room for improvement in many respects, there is also much of good for which we are thankful, and, if women would study their legal status and see how conditions could be improved, without a doubt, the powers-that-be would give a willing and attentive ear to any just and reasonable request.

THE SANITARY HOME.

Mrs. W. J. Hunter, Pleasant.

Among the very many subjects of which the woman of to-day must have some knowledge, if she is to be a good housekeeper, a successful homemaker, pehaps none is of more vital importance than the question of sanitation. In this age of scientific research and widespread information, it is unpardonable that any woman with the care of a home, the health and happiness of the inmates in her keeping, should remain in comparative ignorance of the importance of sanitary conditions. How very much the health, happiness; yes, even the lives of the inmates of the home depend on the food they eat, the air they breathe, and the absence of the many disease germs found in unsanitary surroundings.

Where fresh air and sunlight do not enter, the doctor must, and, as prevention is always better than cure, the nearer we can get to the perfectly healthy home, just so far will we be removed from the danger of disease, and by this we do not mean only those definite ills, such as fevers, diphtheria, etc. It would be hard to estimate just how much of our langour, headache, loss of appetite, weakness or the slightest physical disturbance we suffer from; yes, I would go even farther and include our variable tempers: peevishness and worrying are directly traceable to some unsanitary conditions in our home. Every woman should have some very definite knowledge of sanitary science, and ever seek to promote a healthy, pure atmosphere in her home, just as regularly as she prepares the meals or discharges any other duties in her many-sided *role* of home-maker.

Situation.—Of first importance from a sanitary point of view is the situation of the house. This will be of main interest to those likely to buy or build a new home. Those permanently settled can but seek to improve present conditions. The chief essentials are pure air, dryness and sunshine. The choice is a slight elevation, to insure drainage, the house preferably facing south-east, that sunlight may reach all the rooms. If on a rise of ground, the surface water from rains will drain away naturally, but, if level, underdrains are necessary. If soil is clay, special provisions must be made. In sandy soil the danger is from drainage from the cesspools, drains or sewers raising poisonous gases to enter the house by way of the cellar. The cellar under the whole house should, if possible, have more careful attention than the parlor. Much of the air from the cellar enters the rooms above. So it is important that it be kept in perfect condition. The ideal

cellar is almost one-half above ground; floor dry at all seasons, two or more large windows, plastered overhead, cement or asphalt sides and floor. No form of decay or mold in vegetables or other foods should be allowed to remain. Daily ventilation is necessary to disperse ground air, which is laden with foul gases and moisture. A liberal coat of whitewash with lime should be given every spring. All this will insure fairly pure air and the cellar will not prove the menace to health we sometimes find it.

Drainage.—Drainage and plumbing are important factors in sanitation. It is well to start with a good system of plumbing and drainage, and also by constant attention to keep it in good working order. That system is the best that most quickly and completely removes all refuse matter from the dwelling. Where there is the water carriage system, it is easier to solve the problem. Even then some scientific knowledge is necessary, or, as a substitute, unbounded faith in your plumber. Simplicity with efficiency is the keynote. It is recommended that every inch of pipe, drain, joint or trap in the connection in the house be exposed to view, and that traps be affixed to each basin, bowl, tub or sink to prevent return of foul air from the pipe. If no water system is available, the dry earth closet is thought best. Sanitarians condemn the cesspool, claiming that the gases therefrom make their way back to the house and also pollute water in wells and springs, even at a great distance. The sink should have frequent flushings with ammonia or soda to clean the grease from the pipes. Clean water should be allowed to run through the sink and pipe frequently, especially after treatment as above. Where there is no sewerage system, the sink waste pipe should connect with a drain and empty a distance from the house, instead of with an open spout emptying just outside the kitchen wall. In no case should waste water be thrown too much in any one spot in the vicinity of the house. Do not have a cupboard or closed in woodwork of any kind under the sink. It only gathers rubbish and is a good breeding place for germs.

Heating.—In the matter of heating the house, the main point is to have it sufficiently warm for comfort, while the air is kept pure and fresh. While it is not always done, one of the best methods of supplying fresh air with the heat is by the cold air shaft from outdoors. We should guard against the furnace that sends up a small volume of highly heated or burnt air. The furnace and all connected with it should be large enough to send up a large volume of air moderately heated. We then have both heat and ventilation. The cold air shaft must be air tight, that no cellar air be drawn into it. Where stoves or hot water heating are used provision for fresh air and moisture must be supplied. Registers in the floor should be lifted out quite often and cleaned out with damp cloth. A small pail of water suspended under the register is a good method of supplying needed moisture. Always be careful to let all gas burn off coal fires before checking, as this gas, carbondioxide, is most poisonous and even in small quantities is most injurious.

Ventilation.—The necessity of a generous supply of fresh air in our homes cannot be too strongly urged. Sanitarians agree that it is the first essential. The housekeeper must give the matter of ventilation unceasing attention, if the inmates of the home are to be kept strong, active and happy. Breathing impure air is the main cause of many of our headaches, listlessness, laziness, irritability and nervousness. It undoubtedly enlarges our fuel bill to provide sufficient fresh air in our homes in the winter season, but this is fully repaid by the doctors and nurses bills we escape, not to speak of the pleasure created in the home, that cannot be measured in dollars and cents, of having everyone agreeable and in good temper. If the outside air is very damp and foul, no good purpose is served by opening doors and

windows, but, otherwise, every part of the house should be daily opened up for a short time for change of air. It must be remembered that to ventilate, circulation is necessary, as most of the impurities in foul air rise. The ideal way when building is to provide ventilation near the ceiling in each room, connected by pipe with the chimney or ventilating flue above the ceiling; but, where this is impossible, a window or skylight in the upper story left open a few inches is a great help. A fire-place in any room is a valuable possession, as the draught draws away the impure air at all times and particularly when a fire is lighted. When fire is not needed, a lighted lamp set in the grate causes an upward draught and answers the same purpose. In cold weather warm the rooms quickly after ventilating. Keep halls warm and sleeping rooms cool. It is a wise precaution to have a thermometer in each room. The temperature of the living room should not exceed 70 degrees. Air the bath-room several times daily for a few minutes in cold weather and in summer keep window open top and bottom all the time, if possible. It is well, if there are windows or doors on opposite sides of the kitchen, to allow a quick change of air at any time. There is a contrivance called a hood that may be placed over the cooking stove to carry off steam and odors of all kinds. It is attached to the chimney.

Lighting.—We will also consider the subject of lighting our homes. Artificial light at best is unsanitary and unnatural, so it is well for us to study conditions, that the harm therefrom may be as little as possible. The object is to produce a strong, steady light with as little harm as possible to the air we breathe. The electric light is undoubtedly the most perfect illuminator, as it does not consume any oxygen from the air and the heat from it is very slight. One ordinary gas jet consumes as much air as two people, and a kerosene lamp as much as four. All combustion uses up oxygen and produces carbonic acid gas, so all burning lights are a great tax on the means of ventilation. In using lamps, several points should be noted. Keep lamp full of oil. It increases light and lessens danger of explosion. Keep lamp turned up full whenever lighted. The more perfect the combustion the less tax on the air. A turned-down light in a sleeping-room is slow poison. Use best oil and burners obtainable. Boil burners often in soda, to clean. Supply new wicks frequently. They soon become clogged with impurities in the oil.

Furnishing.—Finally, we will consider for a little the furnishing of our sanitary home. In the elaborately furnished house of the present time, the best sanitary conditions are well nigh impossible. They are too full of things—too much bric-a-brac, too many pictures, too much draperies, upholstered furniture and heavy carpets. Light and air have not free access, dust finds many lodging places, and last, but not least, the housekeeper's life is a burden to her. Furnishings in our homes should be agents to minister to our comfort and pleasure and not for the purpose of show, that our neighbors and friends may marvel at our affluence. If it is possible to secure an extra maid or two that these things may be kept dust free, it is not so bad. If not, let us sacrifice elegance on the altar of comfort and cleanliness. It is with the germ life in its many forms that the sanitary housewife has to do. Some of these attack the human body and cause disease; others work in our kitchens and pantries and are responsible for all souring, molding, fermentation and decay in our food. The war against dust must be evermore waged, so simplicity of woodwork and furnishings is desirable. Hardwood, stained or painted floors with rugs easily lifted and cleaned, walls smooth and easily cleaned, windows not so much shaded and draped that sunlight and fresh air are denied

entrance, and upholstered or much carved furniture reduced to the least possible point. All these things count for much in the housekeeper's work against dust and dirt. In the bedroom all useless ornaments, fancy work, and feather beds conspicuous by their absence; mattresses and pillows frequently exposed to sun and air; soiled clothing removed at once from the room; bed coverings all washable; in bath-room there should be a rug that can be lifted from a painted or oil floor; walls tile, paint or varnished paper; large window with little or no draperies. The kitchen floor may be oiled, painted, or covered with linoleum; on no account carpet in the kitchen; walls that may be washed; light, airy pantry, with no large out of the way corners or any place where rubbish may gather. All these crowned by the eternal vigilance of the never weary housekeeper. Many of the things we have mentioned may seem trivial, but the sum of these trifles may just spell the difference between physical vigor and ill-health, between happiness in the home and discomfort and trouble to all therein. In any case, it is the regularity in taking care of the little things that advances housekeeping to a fine art.

All through our lives it seems to me we use up a great deal of our strength and energy catering to our likes and dislikes, our personal inclinations, the prevailing fashions, or, may be, the opinions of our neighbors. If necessary, let us forego some of these and direct more of our time and strength to acquiring information upon and studying to provide for ourselves and those under our care that which is one of the prime factors in all healthful, happy lives, a sanitary home.

BATHS.

Mrs. Edith Robson, Mount Elgin.

The skin is not only a protective covering for the body, but a complex excreting organ. It is covered with minute pores. These pores are the doorways for the deposit of much waste matter from the body. Just think what would happen if you should throw all the waste material from your house out of the doorway. It would pile up and fall over until no one could get in or out, and the doorway would be useless because of this great amount of rubbish not being cleared away. If the doorways of the houses were close together, some of this stuff might fall back into the house, thus giving you extra trouble to keep order within. Just so is it with these doorways of the skin. If the waste matter be not taken off, it accumulates until the door or pore is filled, and not only no more can be brought out, but also that within will make serious trouble. It will be absorbed by the blood vessels and carried to different parts of the body. Thus, the kidneys, liver and lungs will try to expel this waste matter, and, in doing so, increase their own work. Sometimes they succeed in the elimination of this material when no bathing is being done; but sometimes the strain is too much for these organs, as very serious kidney disease has been known to be the direct result of insufficient bathing.

So there is great necessity for the bath. Almost any bath will remove some waste material from the skin, but what is required is the bath that will remove all this waste matter. As there is an oily deposit, it calls for soap, or some substitute, to remove the excess of oil from the pores. We sometimes see children who would almost bring us to believe that the words of the colored auntie down South were true, when she called to her three-year-old son, "Come in heah, come in heah dis minute, till I wash yuah hans and face. Come in heah, I say, or folks 'll think yuah pooh white trash."

The simple bath for cleanliness may be hot, warm, tepid or cold. It may be taken in the form of a sponge, shower or tub bath. But the bath for real cleanliness is the hot water and soap bath, rubbing well, just as mothers used to do when they put the children in the tub on Saturday night, never forgetting the soles of the feet and between the toes. When preparing for an operation, surgeons consider it necessary to scrub their hands and arms with hot water and soap with a brush, for fifteen minutes by the clock, before they are ready to rinse. This might be a good rule in bathing the body for cleanliness, as the oily matter would be scrubbed out of the pores in this way. The soapy water must be well rinsed off with warm water, for which a shower bath is excellent. A good rubbing with a towel should follow. It is well to rest after a hot bath, and for this reason it is wise to take this bath before retiring.

Each morning a cold plunge or quick sponge, followed by friction until the skin glows, is an excellent tonic for the nerves. Even the cold spong across the chest and neck is a preventative of colds on the chest. The mouth should be washed and the teeth cleaned frequently.

Thus, even in a state of health, frequent and thorough bathing is a matter of the first hygienic import. Dirt of any kind blocks the mouths of the sweat bearing tubes and impedes their action. This throws more work upon the other excretory organs, disturbing the balance of their functions, so that disease may often be traced simply to a failure to keep the pores of the skin open. In sickness, it is even more serious, as the excreted matter is morbid and dangerous. Yet bathing is often neglected through fear that the patient will take cold. But cleanliness is a positive aid to recovery. With proper precautions, there are few patients who cannot be washed without danger. At least a sponge bath in bed can be given, care being taken neither to chill nor fatigue the patient. Some time ago a nurse was entertaining her patient with an interesting story while giving a sponge bath. Gesticulation was given whenever the story called for it. Presently the patient said, "My wet arm feels cold." The arm was dried and covered and the story and bath proceeded, but, before the bath was finished, the patient had a chill. This was the wrong effect of any bath. There is a time to entertain patients who are able to be entertained, but it is not during a bath.

To give a bed bath, the room must be warm and free from drafts. The bed must be protected from drops of water, and all articles required must be ready beforehand. Have plenty of warm water and exchange, not allowing the water to become soapy. Expose only a small part of the body at a time; wash, dry, and cover before proceeding further. A bath should never be given within two hours after a full meal. If the patient seems at all fatigued, some light refreshment may be helpful.

It is refreshing and soothing when one is tired at night to have the back sponged in lukewarm water and then massaged. The long strokes along the spine give a quiet to the whole nervous system and one falls lightly to sleep.

THE HEALTH OF WOMAN.

DR. LAURA HAMILTON, TORONTO.

By "health" we mean that every organ of the body is doing its particular work—silently, perfectly, and without consciousness on the part of the body as a whole. The moment a person becomes aware of the existence or functioning of any organ, then there is something out of order.

Very momentous consequences depend on the physical well-being, as a whole, of the women of any country; for, as the women of one generation are, so will the men of the next generation be: the men and the women, and these together make the nation. A recent writer on a kindred subject states a wonderful truth when she says wisely, "The whole human race must needs in each succeeding generation pass through the body of its women." A century or less ago, when the slavery of women had not lifted as it has to-day, it was, in so-called civilized countries, considered genteel and attractive with the masculine mind for a woman to be delicate, and we find portrayed by Dickens and other novelists the female who either kicked her heels on the floor or fainted when under the influence of any strong emotion, pleasurable or the reverse; and that the same idea still lingers is shown by the following quotation from a publication of 1911: "Like most men in the Southern States, he liked a certain amount of weakness in the woman he loved." But, on the whole, the women who lose their self-control are not the most admired to-day, and those who lack presence of mind in the time of accident or illness are daily growing fewer. The modern woman is ashamed of not being ready for emergencies or able to adapt herself to circumstances. The desire and the ability to "make good" may be seen on all hands in the work of women of to-day. All of which goes to show that the mentality of women, as a whole, being given a greater amount of exercise, is growing stronger and of better quality. And following this will surely be an upbuilding of physical strength and well-being. As a matter of fact, women have greater powers of endurance than men, in natural vitality, in longevity, in their ability to bear pain, or in simple patience and endurance where such are required. I once asked the superintendent of a training school for nurses what her experience (and she had had considerable) had been in the training of men and women nurses, and her reply was that it seemed almost impossible to train men. To my query of "Why?" she said, "It seems as if they could not be patient and they would drink." Again, in the case of man and woman drowning or starving, other circumstances being equal, the woman lasts longest. Female infants seem from birth to be stronger and more easily reared than male.

From another standpoint, everyone of us can recall many cases of a woman left widowed with a large family of little children, and somehow she will hold that family together, keep the home, bring up the children, even while working out by the day, give them some education and a fair start in life; while the average man, under similar circumstances, seems quite incapable of accomplishing this thing, even though he have the stronger physique and heavier muscularity, is capable of greater physical exertion, and under present laws is paid a much larger wage, besides having more means at his disposal of making money. Yet, again, men and women are born of the same parents and draw physical and mental vigor from the same natural sources. In early childhood their food and environment are similar.

All these things being so, why do we find so many women in early or middle life far below par in health, already settling down to a permanent condition of being "not quite strong" or, as it is put in homely phrase, "complaining."

Why are the women's wards in hospitals so full, and the women patients in the dispensaries of great cities so numerous? Why do women form the bulk of most physicians' patients? And why do women wear out and continue a half-alive existence when men are at their prime?

Does the mere matter of sex account for all this? Apparently not. The Creator who made man, male and female, did not make one machine to do its life

work imperfectly, while the other worked faultlessly to the end, even though it did not work so long.

Is it that child-bearing is so strenuous? Science proves otherwise. For there is no form of life that is not at the acme of its healthfulness when it reaches its point of physiological perfection, and that for woman is motherhood. Besides, quite as many women are in poor physical condition who have never borne a child as those who have.

Olive Shreiner, in her last book, "Woman and Labour," indirectly, in her opening chapters, gives us the keynote of the reason of the prevalence of lack of health among women to-day. She traces the history of woman for two thousand years, from the time when our ancestress, the freeborn woman of the ancient Germanic tribes, travelled by the side of man across a continent; shared with him in the chase and in the preparation of their spoil; sat in his councils of war or of peace, if he had any; fought in battle and conquered or died side by side with him. Then she traces the differentiation of the labours of man and woman, showing how, as man lived in communities, woman no longer went to war or to the chase; but, staying at home, prepared the food man brought and tilled the soil. Later, war and the chase being less prevalent, woman was more and more confined to the smaller sphere: man tilled he soil, woman still preparing the food, clothing the household, working strenuously, yet ever within narrowing bounds. Still later, man encroaches further; the manufacture of raw material passes from her hand to his, even the actual making of garments and cooking of food being largely done to-day in the great factories under the control of man, the tendency always being to curtail the freedom, not only of woman's outdoor, but also of her mental life, till one finds scores of women of the present age who for weeks at a time need never leave the four walls of their home, be that home palace or hovel, whose hands are employed day after day in a monotonous round of little necessary or unnecessary tasks, and whose minds, never being required for either a wide sweep or a steadily concentrated train of thought, remain idle, stagnate: and the thought force, turning inward, manufactures those poisons which produce an army of half-sick women. Physicians and psychologists have framed the term "auto-intoxication" to cover that great series of complaints which have this one source.

We all know that in any natural form, that function or organ which is not in daily use, either atrophies or decays; in each case working ill to the organization to which it belongs. Nothing is truly healthy that does not use to its limit every ability with which the Creator has endowed it. And yet the vast majority of womankind in civilized or semi-civilized countries to-day are not required, indeed are distinctly discouraged, from using to its fullest extent, and to the end of their term of existence, that thought power with which the Creator has endowed them equally with man. "You are not thinking of studying medicine—a woman should not do anything like that," said an old friend of my father's generation to me some years ago. To my modern query of "Why?" he replied, "Oh, women should not do anything hard; the men should support the women of their families. Women are for the amenities of life." He has since passed onward. The woman he loved and who loved him lives on still in her old age, her lonely life, as he lived his, for neither ever married, because he was striving "to support the women of his family." Together they might have conquered the difficulties that seemed to keep him always poor.

One invariably finds that where one person keeps another in either partial or complete idleness—be the motive apparent kindliness, greed or cruelty—a gross in-

justice is done to the parties concerned and to an ever widening circle of connected lives.

To put it otherwise, only absolute freedom (and this does not mean license) in the exercise of every God-given faculty on the part of each human being can insure health for the individual and the well-being of the community, and freedom in this sense is another form of justice.

Let us come now from a general to a practical application of these thoughts.

As has already been shown, a boy and a girl derive physical and mental life from the same parents. Their method of entering life is the same, and their nutrition and environment in early life the same also. A little thought will convince a reasoning mind that by process of analogy it appears to have been the Creator's intention for this similarity in living to continue, but man has decreed otherwise. Almost immediately upon a child commencing its individual life, we find the difference in treatment of the boy and girl beginning. Dress is, perhaps, the first thing. On discarding the baby clothes, the boy is put in garments that allow perfect freedom of limbs and muscles, the girl is hampered with skirts, little skirts may be, but they hamper her nevertheless. I watched four children, three boys and a girl, each about seven years old, indulging in the delightful pastime of jumping off a fence on a windy day. The girl was quite as active and agile as the boys, but, having reached the top, could never jump with as much freedom, for the wind caught her little skirts and either blew them over her head so as to blind her, or else she ran the risk of catching them on a nail, that was in the fence top, as she jumped. The boys were quite care free. Said a thoughtful woman to me the other day, "I am dressing baby (a little girl of three) in rompers, and I intend to go on doing so. Yet already a good ministerial relation is talking to me about putting her in dresses. Why should she at her age be trammelled with her sex?" At another time this same lady remarked, "It aggravates me beyond description, this continual stupid distinction. For instance, a good-natured visitor comes to see me and a child enters the room, the visitor produces a watch and shows it to the child. If the child is a girl, the watch is hung around her neck, and she is told how pretty she looks; if a boy, the mechanism of the watch is explained to him, that is," she added acidly, "if the visitor has enough sense to explain it." But thus it is, from the beginning the boy is taught and encouraged to think, to concentrate his thought and energy in work and in play, in his relations with others to study human nature, and that it is fair to give and take. His interests are almost wholly outside himself. Entirely the reverse of all this is the usual method with the girl. She is "dressed up" for visitors. She is expected to keep her clothes clean. Her mind thus being kept on herself, what work she is given to do is such as to discourage concentration of thought. The free outdoor games, the policy of give and take, the trading instinct, all of which go to reveal human nature and make for power, are all likewise discouraged in the ordinary little girl's life. The helping with the dishes, hemming dusters, dressing dolls, or playing tea party, though harmless enough in themselves, are not fair substitutes, either in thought or health producing force, for the untrammelled outdoor life of the boy. It would be a fairer arrangement if both children learned to help about the house, and both learned to play hockey, and, by miniature trading, to know the value of money. As the period of adolescence approaches, this differentiation increases. Both children increase in stature, both become more or less languid and reticent and possibly difficult to manage; both are filled with strange new thoughts and questions and desires. Some few possess parents who are kind and true-hearted enough to lucidly explain to

them life's processes, who are wise and noble enough to bid them rejoice in that they are attaining to physical perfection and a God-given trust. The majority, however, are left with no adequate instruction from any reliable source. The boy, possibly because of his greater freedom, seems to gain a more rational, though certainly not a clean, knowledge of living processes. The girl is either quite ignorant, or knows only such absurd and probably evil stories as she can glean from schoolmates or sensational love tales. To this mental embargo is added yet further physical impediments: the movements of limbs, of respiration and all the abdominal functions are hampered by long skirts and tight clothing. She is bidden to become ladylike and encouraged to keep more quiet. Fashion comes in with her grotesque form and iron grip, and the girl who will not obey her parents will obey the prevailing mode. Why? Because she and all her friends have been taught to be afraid to think fearlessly, and to be different to other people. To the natural langour, consequent on the strides of growth that Nature is taking at this period, is added the langour and inertia of this unnatural mode of living. The circulation becomes impeded by lack of exercise and the tight clothing, the eliminative functions become sluggish. At this time also comes most probably heavy pressure at school, and close attention to home work of the one class, or confinement in factory or shop of the other class. The vitality of the girl, having sufficient work in the growth from childhood to womanhood alone, is taxed to its utmost, and beyond. And here are planted the first seeds of ill-health for which the soil has long been in preparation. Indigestion, headache, anæmia, nervousness are the immediate results, followed by a score of more indirect ones. Now begins the habit of dosing with pills or headache powders, of reckoning on nerves and calling attention to them, of introspection in its various forms, with its fearful possibilities in the making of neurotics and "nervous wrecks." Happy is the girl whose parents are brave enough and strong enough to learn how to live, and, in spite of public opinion, to train her to regard as a sacred trust the beautiful body she has been given.

Womanhood arriving, with a lessened vitality she enters upon her new life, only to find the chains of custom binding her more closely. Naturally more conservative and sensitive than her brother, everything in her past training has tended to increase these qualities, till they, too, add to her fetters, instead of, as they were intended to do, supplementing wisely the bolder qualities of the man.

As has been already pointed out, the dress of woman forms one great impediment to the muscular exertion which is needed by every healthful body, and it is an uphill path from beginning to end for the woman who ventures on any deviation from custom in this matter. Only those who from principle have followed this road can speak with knowledge of the continual petty obstacles to be overcome. Moreover, opposition does not come entirely or even mostly from women. Instance, the so-called "Harem skirt"—the "divided skirt" of fifteen years ago—introduced this last time with a name which would instantly ruin its possibility of success, yet, nevertheless, a garment that would prove of infinite health giving value to any active woman; and, mark, it was not women who raised the outcry of ridicule against it, but men. Yet, I think, the statement will not be denied that not one man in a hundred would walk three miles a day in muddy or windy weather with a skirt flapping about his ankles, that he had either to hold up or else endure the wet, dirty thing round him till he had time to remove it. Not one man in ten would follow the ordinary activities consequent upon the caring for even a small house and family clad in corsets and skirts, yet a woman is "untidy," "sloppy," "lacking in

house-wifely pride and trimness," and the subject of direct or covert ridicule, if she venture upon a course of freedom for mind and body in this matter. And no woman, or man either for that matter, likes to be ridiculous in the eyes of her fellows.

I have referred thus at length to the matter of dress because this is one of the most potent factors in the various phases of it that tend to debar woman from outdoor activities. And the lack of outdoor life is among the most powerful reasons of the lack of vitality in women. And yet if the average girl had not been taught from babyhood to put this matter of clothing the body to the forefront of all other considerations, she would be able to think sanely and give it the right value.

Again, there is in every class of society, and in spite of the amount of literature and lecturing upon the subject to-day a most appalling ignorance of the ordinary laws of nature and rules of health. The inexorable reaping what we have sown is disregarded in all directions, and yet, to those who have eyes to see, nearly every ailment may be traced to its source, but how few people, especially women, are willing to connect the source with the result. A curious phase of blindness in this direction is the fact that, where it comes to a matter of heavier expenditure on the one hand, made possibly, it may be, by the curtailing of expense in another direction, a woman will nearly always make the heaviest drain on her own vital force. For instance, a man will say to his wife, "Profits are not so large this fall. It will be necessary for us to be more carefud. Can you help?" Of course she assents. But how does she go about it? Do the girls make their last winter's suits do instead of new ones? Not at all. Do the boys indulge in less expensive pleasures? No. Is the table less lavishly supplied with the more expensive, but not more nutritious, food her husband prefers? Not this either. None of these things in which all might share. On the contrary, she dismisses the servant and undertakes all the household work herself. She probably asks no help, or very little, from the family. It would interfere with their plans. So she does the housework that winter, and the servant's wages are saved and a good deal of waste besides, but she scarcely gets outside the door. When another year has passed around and things have eased up again she has nervous prostration, and the doctor's and nurse's and druggist's bills come to three or four times as much as the amount the mother saved by the extravagant expenditure of her vitality.

Multitudinous instances of this and similar kinds might be adduced. But they all resolve themselves to the one conclusion: Women are not taught to think.

The same mistakes and breaking of Nature's law, which tradition and custom demanded in girlhood, continue in various forms throughout womanhood with the same results. A large proportion of women have a lop-sided life, and, therefore, lack health. For the unused force, whatever it be, of muscle, of mind, or of love, turning back on itself, stagnates and forms poison that sooner or later infects the whole being and appears in some form of ill-health.

Whether her life be that of wife and mother, or it be her lot to earn her living or find her social sphere alone, makes but little difference from the standpoint from which we are viewing the situation. If, and an increasing number of such cases exist, the woman, like her brother man, finds occupation in the home or in the outer world, in which her body has work to its limit and she has an opportunity for a part of each day to breathe the free air and labor in the sunshine, while her mentality also has opportunity to work to its limit, and her mind to interchange thought with other minds, that woman, be she mother of her own children or has she ex-

pended her mother love on some of earth's needy ones, will not be nervously worn out at fifty, nor yet at seventy; will pass when her time comes, "With such a tide, as moving seems asleep! Too full for sound or foam."

But how comparatively few are such cases. To the large majority of the women of civilized nations to-day there comes monotony of soulless toil in trifling things, through all the grades of society, from the pleasure-seeking of the wealthy to the sordid toil of the very poor.

Be it in the home, the factory, the store, a great proportion of women live with only about half their possibilities developed. That which most often lies dormant being their mentality—the power to think and to apply thought, the power to choose. We may not to-day or in many days change all this; we may not in one generation break the fetters of many centuries; but the light has dawned brightly, and, if each true-hearted woman will set herself bravely to think, will strive to learn and follow Nature's laws, to hold things in their proportion, then, even here and now, there will be a mighty uplifting, a grand stride onward, toward the goal of a full, free life for woman and for man.

THE KING'S CROWNING.

[We have pleasure in presenting herewith contributions from the pen of Miss Marjory MacMurchy, Special Correspondent for The Publishers Press, Montreal, who attended the Coronation of King George V. These will be found entertaining and instructive to our large band of Institute members.]

To make a picture of how London decked herself for the Coronation, lived through these days of joyful acclaim and pageantry, which suddenly from being a pageant became an event framed as such an event should be framed, and then to tell how the city is day by day transforming itself from a great city in high festival to a great city in its mood of common daily work and daily pleasure, is a fascinating task for a writer. There was nothing lacking, as far as one could see, to make Coronation Day fortunately memorable and happy. There were scarcely any minor accidents not more than are inevitable in the life of any city the size of London on any day. There was no failure in any part of the arrangements. King and people, and the King's Court, and the nations who do not live in England but who are at home in England, all bore their parts well in the event of the day. Nothing remains but to remember and understand and gather together one's recollections of this time, so that the bloom and freshness and beauty of these scenes and their meaning may last as long as one's memory of them.

Long Vistas of Color.

For weeks the dignity of London had been obscured by wooden stands and scaffolds. It was irritating and belittling. Then all at once the crude look of the wood had vanished under crimson cloth. The great houses were regal with hangings, flowers, banners and emblems. A minute description of the decorations would defeat its own purpose. What ought to be imagined is long joyous vistas of color, swinging globes of fire, blue and purple and white hangings, color by day and light by night. The streets had become triumphal ways. Joy by day and a poetical magic by night did not precisely come by storm, but they came in sudden waves and in illusive appearances. Then the excitement and the expecta-

tion of the crowds made the week a long holiday. On the Sunday before Coronation the Strand was like a fair.

The night before Coronation it was as if some entry were about to be made into the city, for which everyone waited as we wait for what is good. It made one well content to have walked along Piccadilly on the afternoon of the 21st of June and again after nightfall. It is said that an old lady took up her place in the Mall between four and five o'clock on Wednesday, and that she had with her a kettle and a spirit lamp. Thousands of people felt as the old lady did, if they did not follow her example.

It is to be supposed that some people slept that night, but very many did not sleep. Along between two and three the slackened traffic quickened again. Busses began to rattle along. A salute was fired from Hyde Park and the Tower at 3.40; and the day had opened.—Toronto *News*.

London, June 23.—A long climb up a narrow winding stone staircase on worn stone steps to what seemed the very height of Westminster Abbey led to the south triforium. It was the freshness of early morning, and a cloistered garden down below in the Deanery, so green, so still, so empty, lay like a pool of quiet in the ancient place. From the south triforium one looked down on a scene inside the Abbey so great that it took the imagination of those who looked on it by storm; a scene as perfect as a perfect song, or a matchless jewel, or as the vow of a palladin knight. There was no detail which did not hold its place strongly in this scene of beauty and high meaning, and which did not refresh the spectator through these long hours that swept by, joining into one all the past and present history which one has known. The time did not seem short. One recognized that it was from seven to eight hours long. But the interest of the scene itself, and of what the scene expressed, was so great that the spectator was conscious neither of fatigue nor of satiety. To the last moment one gazed with the rapt attention of the first, with constantly renewed wonder, and absorbed delight. King George's crowning expressed, as nearly as can be expressed—far beyond the point of expression one has dreamed of—the meaning of London, of Great Britain and Ireland, of all the noble dominions, and of each remote possession of the Crown. The friendliness of other nations made the event in the Abbey incomparably richer and finer. But when all is said and written of the Coronation ceremony the point where it becomes immortal is when man, having surrounded the king with all the majesty and magnificence which can be offered, acknowledges that there is something greater still. That which happened in the Abbey can never even for a moment be called, nor be thought, a vain pomp and show. At the moment when such a danger might possibly arise, the crowning passes into a region far removed from changing vanity, and becomes a lofty, yet simple and sincere, declaration that the invisible alone is eternally great.

In the Abbey.

The south triforium is so high above the rest of the Abbey that at first it seemed as if the view would not be good. But this idea proved to be mistaken. From the great height one could see the scene unfold in its splendor. The arrival of the peers and peeresses, of the members of the House of Commons and their wives, of judges, foreign representatives, other notabilities, Cabinet Ministers, Premiers, foreign royalties, the Princes and Princesses of England, the bringing in of the regalia, the three processions arriving and the processions departing, and finally the great moments of the Coronation, were all visible, somewhat reduced in scale, but comprehensive, clear and distinct. There was little room for everyone

who was in the triforium, and if it had not been for the courtesy and kindness of those who were present such a good view could not have been obtained. One owes this benefit, as well as so much else, to individuals met with in passing.

The beautiful grey Abbey lay outstretched like a cross. It could never have been more beautiful. Light shone from on high, diffusing a soft radiance which made the lack of sunlight hardly noticed. Yet once and again during these hours pale rays fell across the nave and through the transepts, glorifying the figures on which they fell. Carpet of a soft shade of dark blue was on the floor of the nave. The valances which draped the tiers and galleries were marvels of good taste and judgment. These velvet hangings were of an old Venetian pattern, dark blue, figured on a ground of silver grey, and they harmonized perfectly with the old stones against which they were hung. The massive organ screen divided the nave from the transepts. Here the organ, organist and orchestra made such music as blended with every point of the service, and lifted high moments higher still. To the west of the screen were seated in ranks of joyous color thousands of distinguished guests. A Canadian journalist could readily distinguish here such Canadian guests as the Lieutenant-Governor of Ontario and Mrs. Gibson; the Canadian members of Parliament, conspicuous among whom was the Hon. Mr. Foster; Lady Mann, Sir Edmund Walker, the Hon. Adam Beck, Mr. Sanford Evans, Mayor of Winnipeg; and Mr. W. L. Griffith, of the Canadian Office, and Mrs. Griffith. A number of other Canadians were present in the Abbey, although many of them did not happen to be visible from the south triforium. The sight of a venerable peer going up the steps which led to that part of the Abbey called the theatre reminded one of Lord Strathcona. When he turned one could see plainly that it was Lord Strathcona, venerable and loyal, and supporting his heavy, magnificent robes with steadiness and dignity. The Peeresses were in the north transept, the Peers in the south, and above them were massed the members of the House of Commons and their ladies. In one of the little recesses behind a tomb with recumbent effigy an artist sat painting the incomparable scene. The bishops made a resplendent group on the north side of the sacrarium. The judges were in a bay of a transverse section of the north transept. The Royal box occupied by the princesses was on the south side, immediately behind the Chairs of State where the King and Queen sat for the first part of the service. The choir in their white robes were in the gallery immediately beside the organ. High as all this color blazed, it was subdued and made beautiful and fitting by the shadows, the sweet loveliness and dignity of the great Abbey.

Awaiting the Ceremony.

In the centre or theatre were the Chairs of Homage, five steps leading to the King's and three to the Queen's. To the south side were the Chairs of State already mentioned. Before the Chairs of Homage was King Edward's chair, with the Coronation Stone. Fine Persian carpets covered this part of the Abbey floor. But these facts were noticed only incidentally. It was the impressive significance and glory of the Altar which drew the eye irresistibly. Thus the Abbey lay, and thus it was prepared for the ceremony.

It is said that guests had begun to arrive as early as 6 o'clock. By 6.30 o'clock a considerable number of figures were moving about on the floor of the nave. One could distinguish readily the Earl Marshal, the Duke of Norfolk, who has evidently taken his office with assiduous seriousness. He moved up and down the Abbey untiringly through all the hours of arrival. His attention was turned

everywhere, and even at the last moment, walking in his place in the King's procession, he turned again and again to look behind. It is clear that the Coronation has exacted from him most anxious labor.

The First Peeresses.

The first Peeress arrived about half past 6. She paced up the long aisle in her crimson train and she was followed before long by such a company of her fellow peeresses as can hardly be described. Crimson, white and gold was the general combination worn by these magnificent ladies. The longest trains were worn by the Duchesses. In crimson and ermine, with gleaming shoulders, wonderful diamond circles on their heads, and jewels sparkling on their bosoms, these ladies moved to their places, each carrying her coronet which she would not wear until the Queen was crowned. One would think, such was their grace, that they had often worn such robes before. But these robes are worn only at a Coronation. To what could the Peeresses be compared but the Queen Flowers of some garden! But splendid as they were, they were not the most splendid sight at the Coronation. Nor were the Peers the most splendid sight, although to see a Peer of England come in full sail up the nave of Westminster Abbey, his full crimson robes billowing about him, is an impressive spectacle. They were seated opposite the Peeresses, and they also carried their coronets, to be worn only when the King was crowned.

In the triforium, up aloft beside the press, were 150 boys of Westminster School. At last we were to hear these Vivats shouted with all a boy's might which we had been taught was the immemorial custom of a Coronation. Some of these boys, the King's scholars, entered the Abbey in the procession bearing the regalia to the west door, where it was to await the arrival of the King. At the west door of the Abbey what is called an annex had been built. It was the same as that used at King Edward's Coronation. The annex is in extraordinary harmony with the rest of the venerable building and affords ample space for the arrival and robing.

The Processions Arrive.

The first and second processions had arrived with trumpets and music. In the stalls down below one could see wonderful figures of noted men and representatives of great governments. Here are the Crown Prince and Princess of Germany. One can see it is true as said that the Crown Princess is very lovely. Here are Prince and Princess Fushimi, with the redoubtable Admiral Togo; the Hon. John Hays Hammond, representing the United States, who had been sentenced to death under Kruger, and now General Botha is not far away from him, while both are at the Crowning of King George of England! One must notice the representatives of Turkey, and of Egypt, and the wonderful Indian Princes, aides-de-camp to the King, with jewels and fabrics too lovely to be described. Here are John Burns and McKenna, Churchill and Wyndham and Balfouh. One is not fortunate enought to catch sight of the Premiers. They must be in the stalls on the south side below the south triforium. But Sir Wilfrid Laurier is present in the blue robes of a Grand Cross of the Order of St. Michael and St. George, and so also are General Botha, Mr. Fisher, Sir Joseph Ward and Sir Edward Morris.

As the Prince of Wales comes in he brings to the Abbey the day's first thrill of feeling. He was made a Knight of the Garter a week or two ago and wears his robes and the hat with ostrich and heron plumes. He passes to his seat on the

south side of the dais while every heart wishes him well. He is so much a boy, and carries himself so steadily. When Princess Mary passed, the Prince of Wales rose and bowed to his sister, who had a long train and a lady-in-waiting. It is said to be her first experience of both. She made a charming sight, and to her also everyone who saw her sent goodwill. Prince Albert, Princes Henry and George, the two latter wearing the Highland dress, followed the Princess Mary. Each saluted his brother, the Prince of Wales, who in turn bowed to them. Only little Prince John was not there. The coming in of the Royal Princesses, with their long trains, was very lovely. The Duke of Connaught, who wore a Field Marshal's uniform, took his place at the right hand of the Prince of Wales and Prince Arthur of Connaught, who wore Garter robes, at his left.

The King's Coming.

Then again sounded the trumpets. It was the chief, the King's Procession. As it moved on in all its state, the eye of a Canadian onlooker was caught and held irresistibly by the Standards. How proud they were, how great their meaning, and how great their pledge, on the King's part to us and on our part to him. The standard of South Africa was borne by Lord Selborne; of New Zealand, by Lord Plunket; of Australia, by Lord Northcote; of Canada, by Lord Aberdeen. The Standards of Wales, Ireland, Scotland and England followed. Then came the Standard of Union, borne by the Duke of Wellington, and the Royal Standard, by Lord Lansdowne. How could one see swiftly enough and clearly enough! This is Asquith, the first time the Prime Minister of the Imperial Parliament has had a place assigned him in the processiou of the King. Here is the Queen's regalia.

Will one forget, I wonder, how the Queen and her ladies looked as they came up the nave. Her head was uncovered. She moved with dignity, pale and grave, a striking, memorable figure. A collar of sparkling jewels was about her neck. Her dress was white, with rich gold embroidery. Her long train was outspread in the hands of six ladies, who paced along, moving with wonderful grace, all in gleaming white. It was the famous train, about which so much has been written, and all the embroidery, with its Imperial significance, was plain to see. The Mistress of Robes, the Duchess of Devonshire, followed. Then the boys far up above began to shout, "Vivat, Regina Maria, Vivat, Vivat, Vivat." To hear the shout rise, and clamour against the roof and die away prolonged in boyish voices which were reluctant to cease, said that into Westminster a Queen of England had indeed come again.

Then came splendid figure after splendid figure with the King's regalia. And at last the King, "Vivat, Vivat, Rex Georgius, Vivat. Vivat, Vivat," chanted the boys, and the thunder of the cry died away against the roof. It was a ceremonial figure, as it seemed at first, too greatly burdened with the pomp of kingship. One longed to see the face of the man who wore these wonderful robes, but it was hidden beneath the Cap of Maintenance. How great his burden, one kept saying silently. But presently the observer had to note how the King stepped on, with all these great figures about him, in the highest place of all, and held that highest place as steadily as any king could. The King of England had come into Westminster Abbey. And it was as if not he alone, but all of us, the people of these kingdoms, were represented there in some fashion, for if it is a responsibility to be a King, it is a responsibility also to be of the people who crown him.

The Service Commences.

When the King and Queen had said their private devotions, the Archbishop of Canterbury presented the King to the people. Contrary to the usual custom, instead of standing by his Chair of State, King George advanced and stood almost in front of King Edward's Chair, so that as many as possible of the great gathering, more than seven thousand, should see him. This, it is said, was by the Royal wish. He also took off the Cap of Maintenance, so that he might be better seen. Then when the Archbishop had presented him there came the great shout of "God save King George."

After all the regalia had been received by the Archbishop of Canterbury and laid on the Altar, which shone gloriously, the men who carried the four swords only were left standing by the King. These were Lord Beauchamp, Lord Roberts, Lord Beaufort and Lord Kitchener. It was possible now while the service was going on to look long and closely at the King and Queen. Queen Mary followed the service with the closest and most grave attention. She often traced with her finger the lines as they were read. She remained still, but her attitude was neither stiff nor immovable. It was an attitude of deep interest and close attention. The King appeared to be somewhat nervous and restless. He read the service closely, but occasionally looked quickly about him, and once or twice raised his hand to his face. Yet most of the time his hands were laid together on the book of the service and one could see that they were sunburned hands. His neck also was marked with sunburn. Throughout the ceremony in contrast with his majestic robes his neck and head looked delicate and far from massive.

The Great Moments.

The great moments of the Coronation followed. Of all these great moments that which seemed to one spectator to possess the most personal note and to join in most intimate relation the King and his people was when after the sermon the Archbishop of Canterbury asked three pledges from the King for every one of his subjects and the King took the Oath holding the Bible in his hands. As he was directed he laid his hands upon the book and kissed the book. Then they brought a silver ink-stand and he dipped the pen and wrote carefully, dipping again before he had finished. His hand as it lay outstretched upon the Bible lay there as the hand of anyone who swears and means to keep his oath. And all the while the wonder-beauty of Westminster Abbey subdued and hallowed the blaze of color, with its grey shadows, springing pillars and soaring arches leading aloft to the clear light of day.

Other great moments there were when the King was anointed; when he was disrobed and stood there a figure so solitary and isolated as to seem unaccompanied and alone in the vast throne: when he was robed again and one by one the symbols of his office were placed upon him and in his hands. In its own place there was laid over the King's shoulders the Armill, a long gleaming strip of cloth of gold which is embroidered, with the emblems of the Dominions over the seas. It reached to the King's knees.

The Crowning.

But surely the greatest moment of all was when the King was crowned. Yet how swiftly it was done. A moment the great crown, brilliant as the dawn, seemed poised motionless over the King's head held in the hands of the Archbishop.

The next it was placed on his head. It seemed too brief an action for such a heavy splendor to descend. But the moment was ended, and again came the shout, "God save King George." Guns were fired outside the Abbey. The people knew that the King had been crowned. It took but a moment to place the Bible in the King's hands. But who that heard them could forget these words: "We present you with this Book, the most valuable thing that this world affords. Here is wisdom; This is the Royal Law; These are the lively Oracles of God." For a moment what then was any splendor which could be seen in Westminster Abbey? They had said that this book was greater than anything else which they had given him. Immediately it was as if the great Abbey disappeared, and what one saw was perhaps a shepherd on a lonely hillside, or a child poring over his Sunday lesson on some Canadian farm, or some other nameless owner of this same book. If any on-looker had felt at the beginning that the Coronation was purely an outward and a proud display, he must have known by this time that whatever was done in Westminister Abbey that day testified plainly that those who are of high estate are greater as men and subjects of God than they are as kings or subjects of kings.

The Homage.

I was not placed so that I could see the Homage. But those who saw it say that when the Prince of Wales followed the Archbishop of Canterbury the King laid his hand on the boy's shoulder, drew his son to him affectionately and kissed him on the cheek. The Homage was followed by the lovely crowning of the Queen, which was much shorter and simpler than the crowning of the King. The Communion followed, and then after a short waiting the King's procession was reformed, and first the Queen and then the King passed down the Abbey and out to the people, guarded and attended by the great men of their kingdoms. As the King passed through the nave every eye of the great congregation was turned in the direction from which he would come and bay by bay as he came into sight broke into hearty cheers. The memory of that sight, of its beauty and majesty, stays like a dream which will not fade. The effect of the long hours, with extraordinary pomp and color, with the exquisite music, and in the presence of that most diverse, splendid audience, was deeply religious. There were moments of delicate loveliness and other moments of gorgeous splendor. But instead of separating class from class the Coronation seemed to bind people of all classes together and make them feel a common cause. For the greatest possessions in that place were not those of a few, but the possession of the many: and the greatest moments were when King George stood a man before his people, their partner in a common pledge. It is true, after all, that a Coronation is a great event.

They went out of the Abbey as they had come in, after guns had been fired again, and God save the King had been sung, the chimes had rung with the bells striking all together, and the great congregation shouted for the King as he passed by. The prettiest, most delightful part of the Coronation was the part borne so well, with manly gravity and boyish simplicity by the Prince of Wales, by his sister the Princess Mary and the two younger Princes, the youngest of all having been kept at home. To see the other children hasten to the Prince of Wales to discuss what had taken place, no doubt with great satisfaction, to see the Prince of Wales turning about to keep his robes out of his small brother's way, and especially to keep his small brother out of the way of his robes, was very heartsome. All through London these Royal children—although the Prince of Wales is now a

Knight of the Garter and sixteen—arouse a feeling of great content and affection. To see their natural delight in the Coronation expressed so buoyantly was very sweet; it was one precious touch of childlike, human nature, which is the same on pavement and on throne.

So the King and Queen went out to the streets, and to the people of the Empire. The perfect military and police arrangements of the capital of the Empire, had served to help the crowd to govern themselves, for the crowd apparently always is capable of governing itself in London. For a few hours the city looked dishevelled where the multitude had waited. Then night came and restored a magic beauty. The people walked abroad and owned the streets, and the streets were lighted for them. But, the Coronation being over, a conviction is slowly growing that what we have all been wishing for has come about. The Empire is one people. We crowned the King with one accord. It was a common bond between the King and the people, and amongst all the people for the King.—*Toronto News.*

The Strength on Sea of British Empire.

London, June 30.—A Canadian's last impressions of this month of June in London begin naturally with the event which was most purely Canadian, although it must be understood that the Coronation overshadows all other events which can be described only as lesser stars in the Summer's sky that do not shine until after the sun has set. The Coronation has been the sun in the sky of June. But a lesser light of special interest to Canadians may do to symbolize the unveiling of a tablet in the Westminster Palace Hotel in Victoria Street, not far from the Canadian Office, which now marks the room where the articles of Confederation were drawn up. The room is a hall of considerable size, and in it were met that day a number of Canadians of importance. One felt that the men who were there counted for a good deal in the life of Canada. It was the kind of gathering of which a Canadian could say with genuine good will, "These men whom you see are really representative Canadians."

It was memorable and delightful to hear such men as Lord Strathcona, Sir Wilfrid Laurier and Sir Charles Tupper speak, one following the other. Such a conjunction cannot be expected to happen often after this. It was Sir Charles Tupper's day. The gallant old man with his unabated willingness to take on any adversary spoke vigorously and well. He is the last survivor of the fifteen of Confederation. It was a great thing to see him standing there and to hear him speak. Sir Wilfrid Laurier's tribute addressed to him of "Well done, good and faithful servant" was hailed as one of the Canadian Premier's happy inspirations.

In years to come it cannot but be that many Canadians will go to read the Canadian tablet in the Confederation Room of the Westminster Palace Hotel.

Sea Strength of England.

The Naval Review made visible what the Canadian has read so much about in his life. the sea strength of England. Few of us could understand the meaning of that fleet of nearly 200 ships, comprising the Home and Atlantic fleet—not a single ship had been brought home for the review. But one at least could look at the ships. They lay in long lanes on the sea, which laughed about them. They were grey like rain. They had blunt noses, and their heavy sides crouched on the water. Terrible machines of war they were; but one cannot suppose that a single subject of the Empire thought of them except as creatures of steel and

fire to guard and keep, never as instruments of aggression. From stern to masthead and from masthead to bow leapt lines of flags, brilliant flecks of color over the grey ships and the dancing water. Then when the King's yacht went by the ships were dressed, and an immovable up-standing line of men went round each ship, dark blue where the bluejackets were and red higher up for the marines. One could see distinctly a single white wave of white hats when they uncovered; and then they cheered. Four dark torpedo boats went by like black hounds, then the yacht of the Elder Brothers of the Trinity, then the King's yacht. King George and Queen Mary and the Prince of Wales were on the bridge, but the King stood by himself. It is said that he had a good day, revisiting what must be home to him. When next he came to London he was extremely red with fresh sunburn. His message to the fleet is also said to have gone right home to the people of the navy. "My high appreciation of the marked precision of the lines" was exactly what they wanted to hear. Nelson's ship, the Victory, lay somewhere in the harbor. One would have liked to see that ship and to see, too, how battleships were built a hundred years ago. There must be a wonderful difference in that time, between a graceful thing which moved with wings and towered in great masts, and these kings of the sea which look almost more like forts than ships. Once a sailing yacht, white and green, went by where we were anchored. It made almost a parade of the pretty way it had of going through the water. There can be no question that a battleship is deadly earnest. There are those who say that as battleships become more terrible, war becomes more impossible. One can understand the meaning of that saying to some extent. It was a wonderful sight, fascinating, perplexing, deeply interesting, with a strange, awe-inspiring beauty of its own like the beauty of a flash of lightning.

Crown of Britain's Greatness.

But there was the fleet. Representatives from all the Empire looked at it and considered several things. They said some things to each other quietly about who paid for these ships and what one's own particular share might be. It was a vision of England's greatness—which she pays for in money and in other things as well. The officers of the Admiralty were very gracious, very generous hosts. They were simple, unaffected, quiet and courteous and they provided so abundantly for their guests that one could hardly find suitable words in which to say thank you.

It is not an easy task to describe the firing of a salute. There is a puff of light white smoke, a burst of flame, and a stabbing explosive sound which is stifled almost as soon as it begins. Multiply this two hundred times. The air rocks about you. One tries to imagine what a battle must be. Then the firing is over. Twice this happened, when the King came and when the King went. Then the King's yacht went by again, with her flags, the Admiralty flag, the Royal Standard and the Union flag, and the review was ended. Those who stayed at night saw, it is said, one of the loveliest sights in the world.

Canadians in Old Country.

One cannot help being struck with the number of Canadians who have made positions for themselves in the public life of London and England. A visiting Canadian must be more or less surprised to find that if he knows Canadians well he will know a good many well-known people in London. The Coronation has brought over a vast contingent of Canadians, and their names, too, are repeated

constantly. One is very near home in London, no matter in what part of the Empire you may live. The Empire bulks incredibly large in London. It means so much more here than it did ten years ago. Naturally, Canada is only one nation of the Empire; and Australia, New Zealand, South Africa, each has as large a share in the making of the Empire in London. No matter what may be said in praise of this Imperial hospitality, all praise fails before the truth. It has been, perhaps, without a parallel. But one fancies that most visiting Canadians intend to live up to the standard, as far as they can, whenever they get home.

One hears pretty stories of the King and Queen and the Royal children. There seems nothing but what is good to hear. One is told how Prince George was in love with Princess May before his brother cared for her and went to Bermuda to be out of the way; how the Queen is unfailingly sympathetic, and that it is a mistake to suppose that she gives directions as to what must or must not be worn; how when Princess Mary bowed in the procession the other day her crown fell off and her two younger brothers chaffed her unmercifully. How the little Prince John who was left at home in Buckingham Palace when his father and mother were crowned thought he would come out on the balcony and see the people. So out he came and waved a chubby hand. The people shouted for him. Then he waved both hands and danced up and down on the balcony. It was a huge success. The King did very well, indeed, if he got as great an ovation as little Prince John. The Royal children are very good for London's constitution. They are extremely human young people. And King George and Queen Mary are much-beloved.

Impression of Beauty.

Strange as it may seem, one of the most lasting impressions that a visitor from a new country has of this wonderful old country, with its great problems, its density of population, and its many poor, is an impression of beauty. London can be very beautiful. One can never forget London as it has looked this June. Whatever problems of poverty and unemployment and social readjustment the country has to face, and they are real problems of portentous size, no seeing person can fail to understand that this is a vigorous commonwealth, with great sources of strength which have never been drawn on to their depths. In vigor of national life, Britain is a young country. She is always here, and always ready to receive envoys and deputations, or friendly visitors, as a mother of nations must be. They may come and go, and come again, always welcome. So while the flags are still flying in London, which were there when the King was crowned, many of her overseas guests, perhaps the majority of them, are saying good-bye. The King has been Crowned. Home calls. And as part of the bond of Empire we have lived through new history.

WOMEN'S INSTITUTES OF ONTARIO.

1911-12.

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Northumberland, W.	President	Mrs. W. J. Jibb	Fenella.
	Vice-President	Miss Maud Holdsworth	Port Hope.
	Secretary-Treasurer	Mrs. J. J. Hinman	Cobourg.
Ontario, North	President	Mrs. Jas. B. Warren	Beaverton.
	Vice-President	Mrs. J. W. Widdifield	Uxbridge.
	Secretary-Treasurer	Miss Kate McKay	Beaverton.
Ontario, South	President	Mrs. S. L. Brown	Whitby.
	Vice-President	Mrs. R. Cronk	Pickering.
	Secretary-Treasurer	Mrs. William Balmer	Whitby.
Oxford, North	President	Miss B. Gilholm	Bright.
	Vice-President	Mrs. A. S. McKay	Woodstock.
	Secretary-Treasurer	Mrs. Matthew Cowper	Thamesford.
Oxford, South	President	Mrs. E. Snyder	Burgessville.
	Vice-President	Mrs. W. E. Barkey	Tillsonburg.
	Secretary-Treasurer	Miss Lee McCrae	Tillsonburg.
Peel	President	Mrs. E. G. Graham	Brampton.
	Vice-President	Mrs. L. A. Hamilton	Lorne Park.
	Secretary-Treasurer	Miss Susie Campbell	Brampton.
Perth, North	President	Mrs. W. Kerr	Milverton.
	Secretary-Treasurer	Miss Barbara Grosch	Milverton.
Perth, South	President	Mrs. Hugh Thompson	St. Marys.
	Vice-President	Mrs. Valentine Stock	Tavistock.
	Secretary-Treasurer	Miss M. Pringle	Staffa.
Peterborough, East	President	Mrs. D. Miller	Warsaw.
	Vice-President	Mrs. R. W. Payne	Warsaw.
	Secretary	Mrs. E. R. Hamblin	Lakefield, R.M.D. 2.
	Treasurer	Miss Ida Jory	Lakefield, R.M.D. 2.
Peterborough, West.	President	Mrs. P. Baptie	Lakefield.
	Vice-President	Mrs. E. Avery	Lakefield.
	Secretary-Treasurer	Mrs. G. Fitzgerald	Lakefield.
Prescott	President	Mrs. W. D. Cameron	Cassburn.
	Vice-President	Mrs. C. E. Byers	Stepney.
	Secretary-Treasurer	Miss E. G. Macadam	Vankleek Hill.
Prince Edward	President	Mrs. Jonathan Talcott	Bloomfield.
	Vice-President	Mrs. Will Browne	Cherry Valley.
	Secretary-Treasurer	Mrs. W. R. Munro	Gilbert's Mills.
Renfrew, North	President	Mrs. Delorma Brown	Forester's Falls.
	Vice-President	Mrs. Andrew Elliott	Westmeath.
	Secretary-Treasurer	Mrs. John A. Bennie	Beachburg.
Simcoe, Centre	President	Mrs. J. H. Hall	Phelpston.
	Vice-President	Mrs. Jas. McDermot	Elmvale.
	Secretary-Treasurer	Mrs. James Champion	Penetanguishene.

District		Names.	P. O. Address.
Simcoe, East	President	Mrs. Wm. Bacon	Orillia.
	Vice-President	Mrs. W. J. Sheppard	Coldwater.
	Secretary-Treasurer	Miss Lillian Harvie	Orillia.
Simcoe, South	President	Mrs. Wallace Sloan	Churchill.
	Vice-President	Mrs. Robert J. Sutherland	Stroud.
	Secretary-Treasurer	Mrs. Robt. Boyes	Churchill.
Simcoe, West	President	Mrs. J. Switzer	New Lowell.
	Vice-President	Mrs. Robert Murray	Avening.
	Secretary-Treasurer	Miss Amelia Ovens	Duntroon.
Stormont	President	Mrs. (Dr.) Marcellus	Finch.
	Vice-President	Mrs. D. Stewart	Finch.
	Secretary-Treasurer	Mrs. J. McQuaig	Finch.
Union	President	Mrs. Mary Miller	Clifford.
	Vice-President	Mrs. John Otterbine	Drew Station.
	Secretary-Treasurer	Mrs. Jno. R. Scott	Clifford.
Victoria, East	President	Mrs. (Dr.) Gould	Fenelon Falls.
	Vice-President	Mrs. W. Cottingham	Omemee.
	Secretary-Treasurer	Mrs. S. H. Cluxton	Bobcaygeon.
Victoria, West	President	Mrs. F. Webster	Lindsay, R. M. D.
	Vice-President	Mrs. J. P. McElroy	Linden Valley.
	Secretary-Treasurer	Mrs. J. T. Birchard	Linden Valley.
Waterloo, North	Hon. President	Mrs. And. Brown, Sr.	Winterbourne.
	President	Mrs. David McKay	Linwood.
	Vice-President	Miss B. Hastings	Crosshill.
	Secretary-Treasurer	Mrs. J. G. Hurst	Conestogo.
Waterloo, South	President	Mrs. F. W. Cornell	Preston.
	Vice-President	Mrs. R. H. Knowles	Hespeler.
	Secretary-Treasurer	Miss Mabel Cowan	Galt.
Welland	President	Mrs. H. Hobbs	Welland.
	Vice-President	Mrs. Irvin Teal	Ridgeway.
	Secretary-Treasurer	Mrs. Jno. Gaiser	Welland.
Wellington, Centre	President	Mrs. M. Thompson	Erin.
	Vice-President	Miss B. Thompson	Coningsby.
	Secretary-Treasurer	Mrs. Jas. McLachlan	Erin.
Wellington, East	President	Mrs. O. Brocklebank	Arthur.
	Vice-President	Mrs. L. Craig	Grand Valley.
	Secretary-Treasurer	Miss S. J. Tebbutt	Grand Valley, B. 36.
Wellington, South	President	Miss P. J. Petty	Arkell.
	Vice-President	Miss M. Ariss	Guelph, 50 Howitt St.
	Secretary-Treasurer	Miss Eliza Friendship	Guelph.
Wellington, West	President	Mrs. J. C. Richardson	Palmerston.
	Vice-President	Mrs. J. Fotheringham	Rothsay.
	Secretary-Treasurer	Miss Gussie Noecker	Drayton.
Wentworth, North	President	Mrs. (Rev.) Leckie	Kirkwall.
	Vice-President	Mrs. J. McKinley Morden	Greensville.
	Secretary-Treasurer	Mrs. J. E. McDonough	Westover.
Wentworth, South	President	Mrs. Chas. Horning	Hannon.
	Vice-President	Mrs. Adam Inch	Mt. Hamilton.
	Secretary-Treasurer	Miss Clara M. Walker	Stoney Creek.
York, East	President	Mrs. R. N. Fairles	Bloomington.
	Vice-President	Mrs. Warren	Markham.
	Secretary-Treasurer	Miss Lulu Reynolds	Scarboro Junction.
York, North	President	Mrs. Geo. Atkinson	Linton.
	Vice-President	Mrs. C. F. Doane	Newmarket.
	Secretary-Treasurer	Mrs. C. E. Lundy	Newmarket.
York, West	President	Mrs. W. O. Duncan	Emery.
	Vice-President	Miss H. Grubbe	Thistletown.
	Secretary-Treasurer	Mrs. J. A. Lambie	Islington.

NORTHERN DISTRICTS.

District	Names.	P. O. Address.
Algoma, Centre:		
Goulais Bay ..... President	Mrs. John Whalen	Goulais Bay.
Vice-President	Mrs. Malcolm McLean ...	Goulais Bay.
Secretary-Treasurer .	Mrs. Daniel W. James	Goulais River.
Tarentorus ..... President	Mrs. T. C. Dinsmore B. 797	Sault Ste. Marie.
Vice-President	Mrs. Chas. Nixon... B. 577	Sault Ste. Marie.
Secretary-Treasurer .	Mrs. A. H. Huckson. B. 182	Sault Ste. Marie.
Algoma, North Shore President	Mrs. Jas. Junor	McLennan.
Vice-President	Mrs. W. A. Shier	McLennan.
Secretary-Treasurer .	Mrs. W. J. Nott	McLennan.
Kenora ..... President	Mrs. S. Hall	Oxdrift.
Vice-President	Mrs. J. Bicknell	Bedworth.
Secretary-Treasurer .	Mrs. J. Latimer	Dryden.
Manitoulin, East ... President	Mrs. E. W. Mackie	Little Current.
Vice-President	Mrs. John King	Mindemoya.
Secretary-Treasurer .	Mrs. A. Trowbridge	Big Lake.
Manitoulin, West .. President	Mrs. G. Moscrop	Poplar.
Vice-President	Mrs. R. Cranston	Spring Bay.
Secretary-Treasurer .	Mrs. Geo. J. Priddle	Silver Water.
Rainy River ..... President	Mrs. J. Carey Smith	Burriss.
Vice-President	Mrs. (Dr.) Charlton	Stratton.
Secretary-Treasurer .	Miss Jessie A. Stuart	Emo.
St. Joseph Island .. President	Mrs. J. Frarey	Richard's Landing.
Vice-President	Mrs. A. Grexton	Harmony.
Secretary-Treasurer .	Miss Nina Kent.....	Harmony.
Temiscamingue .... President	Mrs. J. T. Welhourne	Uno Park.
Vice-President	Mrs. J. R. Philp	Milberta.
Secretary-Treasurer .	Mrs. Walter Kirstine	Halleybury.
Thunder Bay ..... President	Mrs. D. J. Piper	Slate River.
Secretary-Treasurer	Mrs. Jas. McGregor	Slate River.

Districts without separate district officers—Nipissing and Parry Sound East.

BRANCH OFFICERS.

Institute.	President.	Secretary.
Amherst Island—		
Stella	Mrs. R. D. McDonald, Emerald.	Mrs. S. K. Tugwell.
Brant North—		
Cainsville	Mrs. A. B. Rose	Mrs. E. H. Foulger.
Glen Morris	Miss Mary Turnbull, B. 372, Galt	Miss S. M. Weir.
Middleport	Mrs. Richard Dougherty	Miss Mary McBlair.
Moyle & Tranquillty.	Mrs. J. J. Hurley, Brantford ...	Mrs. G. T. Wood. Grandview.
Onondaga	Mrs. M. N. Simpson	Miss W. Churchill.
Langford	Mrs. H. M. Vanderlip.	Miss E. C. Vanderlip.
	R. R. No. 1, Cainsville, Treas.	Mrs. Herbert Hunter.
Paris	Mrs. J. P. Barker, Paris Station.	Mrs. P. Kelley, Paris Station.
St. George	Mrs. W. H. Ker	Miss Edith I. Burt.
Tutela	Mrs. A. Hird, Brantford	Miss A. Birkett, Brantford.
Brant South—		
Burford	Mrs. Milton McAllister, Ameronto	Mrs. J. E. Brethour.
Cathcart	Mrs. G. Vanhorn.	Mrs. W. H. Crawford.
East Oakland	Mrs. F. Cunningham	Miss M. Campbell.
Falkland	Mrs. A. Darnley, Ameronto	Miss Rheta Clement, Paris.
Mohawk (Mt. Pleasant	Mrs. O. McAllister	Mrs. D. McPherson.
New Durham	Mrs. E. Wand	Miss Mary McClellan.
Ohsweken	Mrs. R. Martin	Mrs. Enos Hill.
Scotland	Mrs. Jas. E. Elliott	Mrs. J. E. Auderson.
Whiteman's Creek ..	Mrs. Alfred Apps, Brantford ..	Mrs. Andrew Taylor, Paris.

Institute.	President.	Secretary.
Brockville—		
Athens	Mrs. Wm. Johnston	Mrs. Chas. F. Yates.
Bruce Centre—		
Bervie	Mrs. F. Colwell, Kincardine	Miss Madge McKinney.
	Treas.,	Mrs. A. Cook.
Chesley	Mrs. Jno. Beattie	Mrs. Geo. Warmington.
Kincardine	Mrs. H. Hofland	
	Lake Shore South	Miss H. M. Wright, B. 12.
Paisley	Mrs. D. McGregor	Miss Annie McBride.
Ripley	Mrs. R. J. Graham	Mrs. W. J. Crawford.
Williscroft	Mrs. Jas. Dudgeon	Miss Lizzie Robb.
Bruce North—		
Colpoy's Bay	Mrs. W. T. Parke	Mrs. S. Weir. Wiarton.
Hepworth	Mrs. Albert Jackson	Mrs. E. N. Armstrong.
Hope Bay	Mrs. W. Lewis	Miss Lottie Hepburn.
Lion's Head	Mrs. W. B. Moore	Mrs. F. G. Moore.
Mar	Mrs. A. Wier	Miss Jessie Weir.
Park Head	Mrs. F. G. Farrow	Miss Lou Spencer.
Wiarton	Mrs. W. J. Root	Mrs. Arthur Watt.
Bruce South—		
Lucknow	Mrs. Wm McDonald	Mrs. R. T. Phillips.
Mildmay	Miss Annie Schwalm	Mrs. E. B. Coates.
	Treas.	Mrs. J. A. Wilson.
Teeswater	Mrs. (Dr.) Stewart	Mrs. S. R. Brill.
Walkerton	Miss B. K. Rowand	Mrs. Abbie Thomson.
Bruce West—		
Allanford	Mrs. Adam Aikin	Mrs. Adam Baker.
Arkwright	Mrs. (Rev.) Ottewell	Miss Annie Corbett.
Port Elgin	Mrs. R. M. Lowry	Mrs. J. S. Cameron.
Tara	Mrs. J. Beaton	Mrs. W. H. Whitworth, Box 103.
Carleton—		
Antrim	Mrs. R. J. Storey	Miss J. E. Sparrow.
Carp	Mrs. Geo. Hodgins	Miss Lucy Gourlay, Huntley.
Galetta	Mrs. F. Learmouth	Miss C. Montforte.
Kinburn	Mrs. A. L. Stackhouse	Miss Maud Groves.
Manotick	Mrs. Geo. Clarke	Mrs. G. R. Bradley, Carsonby.
North Gower	Mrs. R. A. Craig	Mrs. A. W. Callander.
Stittsville	Mrs. Thos. Boyes	Mrs. W. W. Mann.
Dufferin—		
Blount	Mrs. John Crozier	Mrs. Chas. Crombie.
Bowling Green	Mrs. John Connor	Miss Millie Durkin.
Camilla	Mrs. Josiah Marshall	Mrs. W. S. Martin.
Corbetton	Mrs. James Aldcorn	Mrs. John Speer.
Honeywood	Mrs. Wm. Wrigglesworth	Mrs. G. A. East.
Horning's Mills	Mrs. T. Huxtable	Mrs. J. F. Webster.
Keldon	Miss Mary T. Mulhall	Miss Emma Anderson.
Laurel	Mrs. R. Currie	Mrs. Geo. Nelson.
Orangeville	Mrs. Wilder	Mrs. T. G. Legate.
Shelburne	Miss E. H. Besley	Miss Mae Hall.
Violet Hill	Mrs. A. Madill	Miss S. Newton.
Whittington	Mrs. S. J. Cruikshank	Mrs. W. T. Johnston.
Dundas—		
Brinston	Miss Catherine Strader, Iroquois	Mrs. C. A. Strader.
Chesterville	Mrs. W. A. Brown	Miss Elizabeth McGee.
Morewood	Mrs. Joseph McCormack	Mrs. Colin Cheney.
Morrisburg	Mrs. J. C. Boyd.	Miss Winnifred A. Gibson.
Winchester Springs.	Mrs. A. McIntosh	Miss Mary E. McIntosh.
Durham East—		
Bailieboro	Mrs. T. Skitch	Mrs. John Greer.
Bewdley	Mrs. W. J. Cruse	Miss Bertha Ainley.
Charlecote	Mrs. S. O. Taylor	Mrs. M. G. Welsh.
Elizabethville	Mrs. F. M. Tamblyn	Mrs. L. G. Sowdon.
Fairmount	Mrs. A. E. Sanderson	
	Morrow	Mrs. T. M. Greer, Morrow.
Garden Hill	Mrs. J. D. Gray	Mrs. W. E. Gray.
Manvers	Mrs. B. H. Carscadden	
	Pontypool	Miss Margaret M. Syer.

Institute.	President.	Secretary.
Durham East—Con.		
Millbrook	Miss M. Thompson	Miss M. E. Needham.
Mount Pleasant	Mrs. Geo. Shield, Franklin	Mrs. Albert Rutherford.
Port Hope	Mrs. W. E. Finlay	Mrs. Fred Sculthorpe.
Lifford	Mrs. Mills	Miss W. Wilson.
Durham West—		
Bowmanville	Mrs. A. L. Nicholls	Mrs. W. W. Allin.
Hampton	Mrs. A. Peters	Mrs. C. J. Kerslake.
Nestleton	Mrs. John Armstrong	Miss Eva L Malcolm.
Orono		Mrs. J. R. Cooper.
Solina	Mrs. S. S. Shortridge	Mrs. James Vice.
Starkville	Mrs. Arthur Hallowell	Mrs. Chas. Reid.
Elgin East		
Aylmer	Dr. Anna Backus	Miss Nellie Copeland.
Bayham	Mrs. Geo. Orton	Miss Winnie Knott.
Grovesend	Mrs. Arkell	Mrs. R. H. Lindsay, Copenhagen.
Luton	Mrs. J. C. Haggen, Aylmer	Mrs. E. B. Hill.
Lyons	Mrs. Wm. Adams	Mrs. Chas. Putnam.
Mapleton & Kingsmill	Miss Mary King, Kingsmill	Mrs. Chas. Brooks, Kingsmill.
Springfield	Mrs. S. Adams	Mrs. (Dr.) Douglas.
Elgin West—		
Dutton	Mrs. John Kerr	Miss May Backus, Tyrconnell.
Iona	Mrs. Moses Lumley	Miss L. B. Pollard.
Rodney	Mrs. B. Eggert	Mrs. G. A. McLevey.
Essex North—		
Comber	Mrs. J. A. McNiven	Mrs. I. M. Mitchell.
Maple Leaf	Mrs. Geo. Switzer	Miss Sadie Wright.
(Maidstone S.S. 11).	Essex	Essex.
Maidstone	Mrs. Richard Mooney	Miss Mary McClaskey, Essex.
Oldcastle	Miss Mary Wolfe	Mrs. Frank Jessop.
Staples	Mrs. Geo. H. Bailey	Mrs. F. O. Lundy, Box 30.
Woodslee	Mrs. O. J. Wilcox, South Woodslee	Mrs. Thos. Plant.
Essex South—		
Amherstburg	Mrs. D. H. Terry	Miss Lou Mickle.
Essex	Mrs. I. Middleton	Mrs. Hugh Wigle.
Cottam	Mrs. J. C. Stotts	Mrs. W. H. Neville.
Harrow	Mrs. Ira Pastorius	Mrs. Angus Clark, Oxley.
Kingsville	Mrs. Harrison Smith, Ruthven	Mrs. Wm. Holdaway, Box 174.
Leamington	Miss Mary Noble	Mrs. J. M. Gibb.
Frontenac—		
Inverary	Mrs. F. S. Ferguson	Mrs. G. E. Leatherland, Latimer.
Westbrooke	Mrs. J. T. F. Sproule	Mrs. Geo. Kiell.
Glengarry—		
Martintown	Mrs. D. J. Robertson	Mrs. S. W. Christie.
Maxville	Mrs. J. P. McNaughton, Dominionville	Miss Minnie Stuart.
Grenville South—		
Brouseville	Mrs. Geo. VanCamp	Mrs. Allan Runions, Cardinal.
Maynard	Mrs. Joe Barton, Blue Church Road	Mrs. A. E. Carson.
Grey Centre—		
Badjeros	Mrs. John Hannon	Mrs. J. C. Finley.
Clarksburg	Miss M. Moore	Miss S. E. Wheeler.
Dundalk	Mrs. F. Vandusen	Mrs. J. B. Egan. Treas., Mrs. Ed. Stephens.
Eugenia	Mrs. Lenord Latimer	Mrs. Jake Williams.
Feversham	Mrs. (Dr.) Ryckman	Miss Maude Guy.
Flesherton	Mrs. R. H. Moore	Mrs. W. H. Thurston.
Heathcote	Mrs. Walter Reekie	Mrs. Victor Armstrong.
Hopeville	Mrs. E. E. Hockridge	Mrs. R. A. Watson.
Kimberley	Mrs. Harry Sloan	Miss Katie Walter.
Markdale	Mrs. W. L. McFarland	Mrs. Chas. Armstrong.
Mill Creek	Mrs. H. Conn, Heathcote.	Miss Sarah A. Clark, Heathcote.
Priceville	Mrs. N. MacKinnon	Miss Elsie McLeod.
Ravenna	Mrs. Walter Buchanan	Miss Eva M. Gould.
Temple Hill	Mrs. Lewis Sewell, Rocklyn	Mrs. R. G. Williams, Rocklyn.

Institute.	President.	Secretary.
Grey Centre—Con.		
Vandeleur	Mrs. J. I. Graham	Mrs. Geo. Warling.
Walter's Falls	Mrs. J. T. Wilson	Mrs. T. G. Proud.
Williamsford	Mrs. A McClure	Mrs. Jno. Collins.
Grey North—		
Annan	Mrs. Early, Leith	Miss Nellie J. Cannon.
Brookholm	Mrs. J. J. Vanstone, Owen Sound	Mrs. F. Mitchell.
Chatsworth	Mrs. Jas. Breese	Mrs. Thos. Collins. Treas., Miss Alma Norton.
Clavering	Mrs. Geo. Hambley, Hepworth	Miss Lizzie Wilkinson.
Desboro	Mrs. A. W. McGregor	Miss Eliza Irvine.
Keady	Mrs. W. C. Henderson	Miss Lizzie McKray.
Kemble	Mrs. John Jones	Mrs. James Gardner.
Kilsyth	Mrs. E. J. Parteous, Squire	Miss Winnie Barclay, Owen Sound.
St. Vincent	Mrs. B. J. Long, Meaford	Mrs. W. J. Logan, Meaford.
Grey South—		
Ayton	Mrs. I. J. Halpenny	Mrs. R. H. Fortune.
Dromore	Mrs. Walter Hastie	Miss Ella Renton.
Durham	Mrs. J. W. Blyth	Miss Margaret J. McGirr.
Elmwood	Mrs. J. H. Dirstien	Mrs. W. Dobney.
Fairbairn	Mrs. W. Gillies, Robb	Miss Annie McArthur, Robb.
Hanover	Mrs. J. E. Knetchel	Mrs. Wm. Bartleman.
Holstein	Mrs. J. Murdock	Mrs. Geo. McFarland.
Louise	Miss M. J. Hastie	Miss Jean Clark.
Haldimand—		
Caledonia	Mrs. Samuel Avery	Mrs. D. C. Lindsay.
Canfield	Mrs. K. Robins	Mrs. Edgar E. Brown.
Cayuga	Mrs. J. E. Fissette	Mrs. R. H. Green.
Cheapside	Mrs. D. McDonald, Selkirk	Miss Bertha Johnstone.
Clanbrassil	Miss Catherine Harper, Cranston	Mrs. Jas. McConachie, Cranston.
DeCewsville	Mrs. James Campbell Nelles Corners	Mrs. Frank Warner.
Erie	Miss P. Biggar	Mrs. J. Dockstader.
Garnet	Mrs. Wm. Anguish, Hagersville	Miss Burton Roulston.
Gill	Mrs. Wm. Ebert Nelles Corners	Mrs. A. Snell, R.R. No. 2, Hagersville.
Hagersville	Mrs. G. L. Beam	Mrs. R. Hambleton.
Jarvis	Mrs. J. J. Parsons	Mrs. W. Simpson.
Nanticoke	Mrs. W. H. Evans	Miss M. E. Hallam.
Rainham Centre	Miss Lena Shank	Mrs. R. F. Miller.
Sandusk	Mrs. Byron Pond	Miss Ruby Peacock.
Selkirk	Mrs. Warren Beam	Mrs. Ernest Lindsay.
Springvale	Mrs. Henry Risdill, Hagersville	Mrs. Leta Ward.
South Cayuga	Miss M. Wismer	Miss B. Albright.
York	Mrs. Emerson Peart. Cranston	Miss Jennie Renshaw. Treas., Mrs. F. Fearman.
Haliburton—		
Gooderham	Mrs. Lorne Hunter	Mrs. Donald McCall.
Haliburton	Mrs. G. Potts	Mrs. Wm. Curry.
Irondale	Mrs. A. Graham	Mrs. J. P. Hartin.
Minden	Mrs. S. Phillips	Mrs. D. J. Hartle.
Halton—		
Acton	Mrs. N. F. Moore	Mrs. W. Laird.
Ballinafad	Mrs. D. Campbell	Mrs. G. C. Campbell
Burlington	Mrs. C. H. Emerson	Miss M. M. Dodson.
Georgetown	Mrs. Geo. Coo, Limehouse	Miss Agnes Cole.
Kilbride.	Mrs. Frank Small	Miss Mary McNiven.
Nelson	Mrs. F. Featherstone	Miss Clara L. Mitchell.
Norval	Miss Helen Smellie	Miss Annie A. Noble.
Palermo	Mrs. John Marshall	Miss Emily J. Hager.
Sheridan	Mrs. John Hardy.	Mrs. Alice Irwin.
Trafalgar	Mrs. Rob. Gorman	Mrs. W. T. Brown.

Institute.	President.	Secretary.
Hastings East—		
Belleville	Mrs. Curtis Bogart	Mrs. John Downey, Box 264.
Foxboro	Mrs. A. Loucks	Mrs. Harry Frederick.
Melrose	Mrs. R. McMechan, Blessington.	Miss Alice M. Long, Blessington.
Quinte	Miss Carrie Reid, Kingston Rd. Belleville	Miss Mary Clazie, Shannonville.
Roslin	Mrs. (Dr.) Hill	Miss Helen Rutherford. Treas. Mrs. W. Shillabeer.
Tweed	Mrs. E. R. Huyck	Mrs. W. B. Huyck.
Hastings North—		
Bancroft	Mrs. Wm. Detlor	Mrs. S. Haryett.
Eldorado	Mrs. Simeon Fox	Mrs. Effie Hulin.
Fort Stewart	Mrs. J. A. Stewart. Boulter	Mrs. C. W. Wilson.
L'Amable	Mrs. Jas. Spurr, Detlor	Mrs. W. R. Power.
Madoc	Mrs. J. A. Caskey	Mrs. W. E. Connor
Marmora	Mrs. Vernon Pringle	Miss E. Chisholm.
Queensboro	Mrs. T. Leslie	Mrs. F. J. Thompson.
Springbrook	Mrs. Fred Fenn, Bellview.	Mrs. Wm. Webb, Bellview.
Wellman's Corners	Mrs. E. Todd	Mrs. J. Parks.
Hastings West—		
Chatterton	Miss S. Boardman	Miss B. Guffin, Box 83, Halloway.
River Valley	Mrs. T. H. Smith, Stirling	Mrs. W. H. Hanna, Stirling.
Wallbridge	Mrs. W. J. Sharp	Mrs. John Phillips.
Huron East—		
Belgrave	Mrs. James Anderson	Mrs. W. H. Ferguson.
Bluevale	Mrs. Geo. Macdonald	Miss S. Collie.
Brussels	Mrs. Wm. Rands	Miss Jessie McLaughlin.
Ethel	Mrs. Wm. Slemon	Miss L. Hall.
Fordwich	Mrs. H. McCabe	Mrs. H. Collins.
Gorrie	Mrs. G. W. Knowlson	Mrs. J. Beswitheric.
Jamestown	Miss Marjorie Strachan	Miss Ina Bryans.
Molesworth	Mrs. Thomas Simpson	Miss Laura Mitchell.
Walton	Mrs. A. Gardiner	Miss Rosa Simpson.
Huron South—		
Bayfield	Mrs. Jas. Spackman	Miss M. Campbell.
Exeter	Mrs. M. Monroe	Mrs. A. Hastings.
Huron West—		
Blyth	Mrs. Geo. Powell	Mrs. P. Gardiner.
Clinton	Mrs. T. Kearns	Mrs. Thos. Mason.
Goderich	Mrs. Charles Young	Miss M. E. Salkeld, Box 59.
Holmesville	Mrs. Lew Tebbutt	Mrs. Will Jenkins.
Kintail	Mrs. A. Beckett	Miss Sarah Taylor.
Londesboro	Mrs. M. Brown	Mrs. R. J. Young.
St. Augustine	Miss Annie Flynn	Miss J. I. McAllister.
St. Helen's	Mrs. A. Anderson	Mrs. R. K. Miller. Treas., Mrs. W. I Miller.
Wingham	Mrs. W. S. Linklater	Mrs. Wm. Bone.
Kent East—		
Botany	Mrs. Dan Winters, Thamesville.	Miss Mary Dick, Selton.
Croton	Miss Kate Fraser	Miss Vivian Snary.
Guilds	Mrs. E. S. Flint. Blenheim	Mrs. Neil Haggart.
Kent Bridge	Mrs. Fred Crowe, Louisville	Mrs. M. West.
Highgate	Mrs. W. J. Smale	Mrs. T. H. Tape.
Morpeth	Mrs. Oscar Gardiner	Mrs. Joe Spencer.
Thamesville	Mrs. J. Duncan	Miss Anna Coutts.
Wabash	Mrs. Wm. Dean, R.F.D., Croton	Mrs. Russell Holmes
Kent West—		
Cedar Springs	Mrs W. T. Meade	Miss Florence Thompson.
Eberts	Mrs. Wm. McNeilage	Mrs. Jno. Forsyth, Jr.
Irwin	Mrs. Geo. Davison, Chatham	Miss Nettie Rhodes, Chatham.
Quinn	Mrs. Thos. Brown	Miss Gertrude Ritchie.
Port Alma	Mrs. Lewis Simpson	Mrs. J. R. Shanks.
Tilbury	Mrs. Edward Clark	Mrs. C. Brooks.
Valetta	Mrs. Kenneth Campbell	Miss E. Grace Grant, Tilbury.
Wheatley	Miss Mary Plastow	Mrs. Byron Robinson.

Institute.	President.	Secretary.
Lambton East—		
Aberarder	Mrs. Ralph Rogers	Miss Jennie E. McKinlay.
Alvinston	Mrs. Malcolm Campbell	Mrs. A. B. Connor.
Aughrim	Mrs. C. J. Wall, Cairo	Miss Mary T. Clements, Aberfeldy.
Arkona	Mrs. H. Rook	Miss A. Carnaghan.
Camlachie	Mrs. Jas. Lunam	Miss Margaret MacLean.
Forest	Mrs. James Lochead	Mrs. A. B. Parker.
Inwood	Mrs. J. M. Courtright	Mrs. W. R. Dawson.
Shetland	Miss Edith Dobbin	Mrs. A. D. Adams, Florence.
Thedford	Mrs. J. A. Lawrie	Miss Mayme Jamison.
Warwick	Mrs. A. N. Cox	Miss Lena Waugh.
Wyoming	Mrs. W. B. Smith	Miss Addie Steadman.
Watford	Mrs. J. Humphries	Mrs. J. V. Brown.
Lambton West—		
Becher	Mrs. Neal Grant, Duthill	Mrs. W. McAllister.
Brigden	Mrs. Alex. Shaw	Mrs. J. Poland.
Colinville	Mrs. A. R. Goodall	Miss Mabel Cruickshank.
Lucasville	Mrs. S. Kerr	Miss Edna Millikin.
Oakdale	Mrs. John McCallum	Mrs. Wm. A. White.
Oil Springs	Mrs. John Sutherland	Mrs. A. W. Dewar.
Osborne	Mrs. J. Heal, Sykeston	Mrs. George Miller.
Petrolea	Mrs. S. C. Denham	Mrs. W. R. McDonald.
Rutherford	Mrs. F. Emery	Mrs. Jno. Thomson.
Thornyhurst	Mrs. Wm. Leonhardt	Mrs. John Featherstone.
Wilkesport	Miss Verna Sipprell	Miss Helen Easton.
Lanark North—		
Almonte	Mrs. John Steele	Miss A. J. Forgie.
Clayton	Miss Oswald Boland	Mrs. M. J. Hogan.
Lanark	Mrs. J. K. McIlquhan	Miss Annie MacDonald.
Lanark South—		
Carleton Place	Mrs. Margaret Yuill	Mrs. Robert Cavanagh.
Maberly	Mrs. Geo. W. Buchanan	Mrs. Robt. J. Hughes.
Perth	Mrs. H. J. Strong, Manion	Miss Theresa Courtney. Treas., Miss Henrietta Watson.
Leeds—		
Delta	Mrs. T. J. Frye, Soperton	Miss C. Hill.
Lansdowne	Mrs. J. Darling	Mrs. Hilyar Warren.
Newboro	Mrs. R. G. Leggett	Mrs. Nellie McGonigal.
Seeley's Bay	Mrs H. H. Elliott	Miss Hazel Washburn.
Westport	Mrs. E. G. Adams	Mrs. H. Lockwood.
Leeds North and Grenville—		
Merrickville	Miss Mary E. Pearson	Mrs. G. W. Elliott.
Lennox—		
Adolphustown	Mrs. W. D. Roblin, Conway	Miss Lilien Carr, Dorland.
Conway	Mrs. J. B. Robertson, Hawley	Mrs. Thos. W. Gurren, Sandhurst.
Lincoln		
Beamsville	Mrs. A. P. Thomas	Miss N. Rowe.
Campden	Mrs. Elisha Staff, Jordan	Mrs. W. Honsberger, Jordan.
Grimsby	Mrs. W. A. Brownlee	Mrs. Geo. van Duzer.
Niagara-on-the-Lake	Mrs. F. J. Roland	Mrs. L. Chamberlain.
Queenston	Mrs. H. C. Bradley	Miss Edna L. Lowry.
Middlesex East		
Birr	Mrs. F. Scott Maple Grove	Miss Becca S. Hobbs.
Crampton	Mrs. Jno. Morris	Mrs. R. Newell.
Harrietsville	Mrs. Alex. McCallum, Mossley	Mrs. C. B. Adams.
Hyde Park	Mrs. J. Colville	Miss Margaret Ramsay.
Thorndale	Mrs. Joseph Wheaton	Miss Jennie Carrothers.
Wellburn	Mrs. Wm. Louch	Mrs. T. B. Patterson, R.R. No. 1, St. Mary's.
Wilton Grove	Mrs. George Elliott	Mrs. Norman Anderson, Glanworth.
Middlesex North—		
Ailsa Craig	Mrs. Wm. Bell	Miss Ada Munro.
Beechwood	Mrs. Jno. Currie, Fernhill	Mrs. R. E. Owen, Fernhill.
Coldstream	Miss Ethel Ward, Amiens.	Miss Ena Campbell, Lobo.
Greenway	Mrs. C. H. Wilson	Miss Mary Hutchinson, Hutchinson.

Institute.	President.	Secretary.
Middlesex North—Con.		
Lobo	Mrs. D. D. Campbell. Komoka	Miss Ella M. Graham.
Lucan	Mrs. D. B. Mcvicar	Mrs. E. B. McTurk.
Mooresville	Mrs. Hiram Windsor, Clandeboye	Miss E. Grundy, Clandeboye.
Sylvan	Mrs. S. A. Loomis, R.R. No. 8	Miss Kate McIntosh, Arkona.
Parkhill	Mrs. W. Dawson	Miss D. C. J. Rogers.
West McGillivray	Mrs. J. H. Amos, Brinsley	Miss Minnie Amos, Brinsley.
Middlesex West —		
Appin	Mrs. D. A. McCall	Miss Ivy McDonald.
		Miss Anna Hyttenrauch.
Kerrwood	Mrs. Ed. De Gex	Mrs. J. M. Brunt.
Napier	Mrs. J. Hughes	Miss Lulu McLean, Kerrwood.
Strathroy	Mrs. Jas. Bogue.	Mrs. M. W. Cummiford.
Monck—		
Canboro	Mrs. W. A. Lymburner	Miss Jennie Carey.
Dunnville	Mrs. Robert P. Read	Mrs. E. Rittenhouse.
Pelham Centre	Mrs. R. B. Fitzgerald, Fenwick	Mrs. L. S. Haney, Fenwick.
Silverdale (Rosedene)	Mrs. R. Brown, Silverdale Sta.	Mrs. Chas. Wills. Rosedene.
Smithville	Mrs. Frank Hays	Miss Sarah Sprague.
Wellandport	Mrs. Coleman	Mrs. C. Urquhart.
		Treas., Miss K. Cohoe.
Winger	Mrs. Joe Gilmore	Mrs. D. R. Swayze.
Muskoka Centre—		
Allensville	Miss McNicol	Miss M. Proudfoot.
Ufford	Mrs. Chas. Oldham	Mrs. Elijah Veitch.
Muskoka North—		
Ashworth	Mrs. Wm. M. Tipper, Etwell	Mrs. Wm. DeMaine.
Aspdin	Mrs. D. Compton	Mrs. Jos. Clarke.
Birkendale	Mrs. Edw. Boothby, Fox Point.	Mrs. S. N. Robson.
Brunel	Mrs. Harry Young, Emberson	Mrs. Gifford Holinshead, Huntsville.
Dwight	Miss P. Morton	Miss Esther Gouldie.
Ravenscliffe	Mrs. E. Tipper	Mrs. A. DeForest.
Silverdale	Mrs. H. Dixon. Aspdin	Mrs. Lydia Spiers, Martin Sliding.
Muskoka South		
Bardsville	Mrs. Thos. Donally	Mrs. H. Goltz.
Baysville	Mrs. P. B. Bastedo	Miss Minnie Rhodes.
Germania	Mrs. John Thompson, Uffington.	Miss Julia Wise.
Muskoka Falls	Mrs. M. Lahney	Mrs. H. Speedie.
Monck	Mrs. Jas. Fitzmaurice, Bracebridge	Miss Jessie Grant, Ziska.
Reay	Mrs. D. Morrison	Mrs. J. T. Galbraith.
Sanford	Mrs. George Sutton. Port Carling.	Mrs. A. L. Casselman, Port Carling.
		Treas., Mrs. W. A. Hanna, Port Carling.
South Macaulay	Mrs. J. Zimmerman, Lock Box, 231, Bracebridge.	Mrs. Wm. Holliday, B. 331, Bracebridge.
Norfolk North—		
Courtland	Miss Lucilla Harris	Mrs. J. S. Benn
Delhi	Mrs. G. A. Smith	Miss Lulu Kitchen.
Guyshoro	Mrs. Z. A. Leach, Straffordville.	Miss J. A. Watson, Acacia.
Lynnville	Mrs. Emily Kellam	Mrs. Cecil Yeager, Simcoe.
Simcoe	Mrs. A. R. Decon	Mrs. E. C. Barber.
Windham Centre	Mrs. Geo. Henry, Windham.	Mrs. J. S. Merritt, Windham.
Northumberland East—		
Brighton	Mrs. Frank Smith	Mrs. R. O. Morrow, Hilton.
Castleton	Mrs. B. L. Welton	Mrs. W. J. Harper, Oak Heights.
Codrington	Mrs. D. H. Orser	Mrs. Wm. Wilson.
Dundonald	Mrs. Munroe Dudley	Mrs. Joseph Philp, Penryn.
Menie	Mrs. Wm. Rannie	Miss E. I. Stewart.
Percy	Mrs. Geo. Carlaw. Warkworth.	Mrs. Louise Forsythe, Warkworth.
Wooler	Mrs. S. L. Terrill	Mrs. C. F. Wessels.
York Road	Mrs. H. L. Flindall, Smithfield.	Mrs. E. Minaker. Trenton.

Institute.	President.	Secretary.
Northumberland West—		
Cobourg	Mrs. H. R. Saunders	Mrs. Mark Fisher.
Elmview	Mrs. Herb Bell	Miss Maud Holdsworth, Port Hope.
Fenella	Mrs. W. J. Jibb	Mrs. M. Davey.
Grafton	Mrs. A. Spear, The Gully	Miss Loretta M. Winter, Wicklow.
Roseneath	Mrs. G. Ingham	Miss Mae Doidge.
Ontario North—		
Altona	Miss Charlotte Hoover	Miss Alice White.
Brechin	Mrs. M. B. Dack	Miss B. McPhee.
Gamebridge	Mrs. J. B. Warren	Mrs. Jas. Bruce.
Goodwood	Miss Mary Todd	Mrs. R. Gray.
Sandford	Mrs. Walter Lapp, Uxbridge	Mrs. Benj. Widdifield.
Zephyr	Mrs. M. Pickering	Mrs. R. Harmon.
Ontario South—		
Claremont	Mrs. C. J. Brodie	Miss S. Evans.
Columbus	Mrs. P. Cameron	Mrs. W. Richardson.
Brooklin	Mrs. N. White, Ashburn.	Miss Webber.
Brougham	Mrs. (Dr.) McKinnon	Miss Lillie Holtby.
Greenbank	Mrs. Geo. Real	Mrs. F. McKague.
Kinsale	Mrs. J. Seldon	Mrs. R. R. Mowbray.
Pickering	Mrs. R.H. Cronk	Miss Stella Leng.
Shirley	Mrs. Allan Moor	Mrs. J. B. Graham, Purple Hill.
Whitby	Mrs. M. S Thomson	Miss F. Bateman.
Whitevale	Mrs. Hugh Pugh	Mrs. Geo. Pugh.
Oxford North—		
Braemar	Mrs. A. S. McKay, Woodstock	Miss Lottie Sutherland.
Bright	Mrs. D. Aldridge	Mrs. John Leonard.
Cassell	Mrs. Sidney Pearson	Miss Frieda Kaufman.
Drumbo	Mrs. Joseph Prentice	Miss Agnes Paxton.
Embro	Mrs. A. A. McKinnon	Mrs. Thos. Underhill.
Harrington	Miss Margaret McLeod.	Miss Belle McKay. R. M. D. Maplewood.
Kintore	Miss Cassie Day	Mrs. Alex. McCallum.
Lakeside	Mrs. F. G. Seaton	Miss Annie K. Murray.
Plattsville	Mrs. Wm. Richmond Washington	Miss F. Pratt.
Princeton	Mrs. Wm. Freeman	Mrs. Robt. Rutherford.
Thamesford	Mrs. J. A. McDonald	Mrs. W. McLeod.
Oxford South—		
Beachville	Mrs. J. Collier	Miss E. McInnes.
Brownsville	Miss Della Hawkins	Miss Coral Cook.
Burgessville	Mrs. W. Pollard	Miss Flossie Jacques.
Currie	Mrs. Andrew Teeple	Miss Pearl Lammlman.
Foldens	Mrs. H. Munn	Miss Frances Poole.
Mt. Elgin	Mrs. (Dr.) Smith	Miss Florence Harris, Verschoyle.
Norwich	Mrs. A. Cornwell	Mrs. A. W. Lossing.
Springford	Mrs. A. Malcolm	Miss Lena Anstice.
Tillsonburg	Mrs. W. A. Currie	Mrs. W. A. MacMonagle.
Peel—		
Alton	Mrs J. A. Lovell	Mrs. J. L. Meek.
Belfountain	Mrs John Frank, The Grange	Miss M. E. Beer, Erin.
Bolton	Mrs. E. Armstrong, Castleberg	Miss L. Norton.
Brampton	Mrs. Geo. Williams	Miss Susan Campbell.
Caledon (Charleston)	Mrs. Robt. McLaughlin	Mrs. A. Bell.
Cheltenham	Mrs. Thos. Lyons	Miss Ethel McKechnie.
Castlemore	Mrs. N. Harrison	Mrs. George Wiley.
Inglewood	Mrs. Jas. Graham	Miss Fern Scott
Malton	Mrs. Spiers. Elmbank	Miss A. Brocklebank.
Meadowvale	Mrs. F. J. Jackson	Miss E. Orr.
Mono Mills	Mrs. G. J. Lemon	Miss Edna Atkinson.
Palgrave	Mrs. (Dr.) Reynar	Mrs. Ell Clarke.
Port Credit	Mrs. L. A. Hamilton. Lorne Park	Mrs. J. M. Godfrey. Ass't., Miss Agnes Gray.
Streetsville	Mrs. W. Drinkwater	Mrs. O. R. Church.

Institute.	President.	Secretary.
Perth North—		
Hampstead	Mrs. J. F. McTavish, Gadshill	Miss E. Fleischhauer, Gadshill.
Listowel	Miss Bella Cleland	Miss Agnes Cleland.
Millbank	Mrs. W. McKee	Miss E. Crookshanks.
Milverton	Mrs. J. S. Lockie, Newton	Mrs. W. Connell.
Perth South—		
Fullarton	Mrs. John Wilson	Miss Mamie Phipps.
Kirkton	Mrs. M. F. Irvine, Berryland	Miss Sara E. Kemp.
Mitchell	Mrs. William Graham	Miss Annie Elliott.
St. Mary's	Miss Sarah Standeaven	Miss Maggie Driver, Science Hill.
St. Paul's	Mrs. John Worden	Mrs. George Wood.
Sebringville	Mrs. T. Parker	Miss Ida Fuller, Stratford.
Staffa	Mrs. A. A. Colquhoun, Gowrie	Miss M. Pringle.
Tavistock	Mrs. H. Sippell	Mrs. A. T. Bell.
Peterboro East—		
Norwood	Mrs. Wm. Peer	Miss Jessie MacNaughton.
Warsaw	Mrs. D. Miller	Mrs. E. R. Hamblin, R.M.D., No. 2, Lakefield. Treas., Miss Ida Jory, R.M.D No. 2, Lakefield.
Peterboro North—		
Clydesdale	Mrs. Duncan McPherson	Mrs. Agnes L. Hawkes, Chandos.
Mt. Julian	Mrs. Chas. Lauder	Mrs. A. R. Mallory, Clarina.
Peterboro West—		
Lakefield	Mrs. P. Baptie	Mrs. G. Fitzgerald.
Prescott—		
Vankleek Hill	Mrs. John Wilson	Miss E. G. Macadam.
Prince Edward—		
Bloomfield	Miss F. Barker	Mrs. R. Cooper.
Cherry Valley	Mrs. W. R. Browne	Mrs. Wm. Emorey.
Gilbert's Mills	Mrs. W. R. Munro	Mrs. Albroe Cole.
Milford	Mrs. Thomas Clapp	Mrs. D. J. Love.
Mountain View	Miss Lily Wallbridge, Box 1086, Belleville	Mrs. Sayers.
Picton	Mrs. Malcolm Allison	Mrs. C. S. McGillivray.
Rednersville	Mrs. Everett Sager, Albury.	Miss Ida Williamson, Albury.
Wellington	Mrs. J. T. Montgomery	Mrs. T. S. Stinson.
West Lake	Mrs. James Wright R. M. D. No. 1, Picton	Miss Erma R. Masters.
Renfrew North—		
Alice	Mrs. John Scott, Forest Lea	Miss May Browne, Forest Lea.
Beachburg	Mrs. G. E. Wilson	Mrs. James R. Davidson.
Bromley	Mrs. Jas. Forrest. R. F. D.	Mrs. N. Purdie, R. F. D.
Forester's Falls	Mrs. (Dr.) J. Brown	Mrs. P. R. Pounder.
Micksburg	Miss Laura Rath	Miss Lily Ross.
Queen's Line	Mrs. J. J. Moore	Miss Katie Roberts.
Shields	Mrs. S. Rankin	Mrs. R. Purcell.
Westmeath	Mrs. David Bromley, Bromley Line.	Mrs. Wm. Keyes.
Renfrew South—		
Burnstown	Mrs. J. F. Blane	Miss A. McLachlan.
Northcote	Mrs. Zavier Plaunt	Miss Jessie Gibbons.
Simcoe Centre—		
Allenwood	Mrs. Marshall Charles	Mrs. Jack Northgraves.
Crossland	Mrs. R. Story	Miss Sara McGinnis, Elmvale.
Edenvale	Mrs. H. Adamson	Miss Annie M. Gilchrist.
Elmvale	Mrs. John Middleton	Miss Jean Graham, Saurin.
Elliott's Corners	Mrs. Wm. Rumney. Vasey	Mrs. H. McClung.
Dalston (Silver Maple)	Mrs. D. M. Coutts	Miss J. Watson.
Hillsdale	Mrs. W. J. Turner	Miss M. E. Richardson.
Minesing	Mrs. Wm. Grant	Mrs. Geo. G. Johnston, Box 12.
New Flos	Miss N. Kirkpatrick	Mrs. C. W. Sage, Vanvlack.
Phelpston	Mrs. J. H. Hall	Miss May Shanahan.
Randolph	Mrs. E. A. Elson	Miss Ethyl P. Todd.
Wyebridge	Mrs. T. M. Robins	Miss Verna Carruthers.
Wyevale	Mrs. Fred Stott	Mrs. Wm. J. Scott.

Institute.	President.	Secretary.
Simcoe East—		
Ardtrea	Mrs. R. A. Lehman. Orillia	Miss Grace Reed, Orillia.
Coldwater	Mrs. S. D. Eplett, Sr.	Mrs. W. J. Sheppard.
Crown Hill	Mrs. S. Dunsmore	Miss Alice Quinlan, B. 22. R.M.
	B. 13. R.M.D., Barrie.	D., Barrie.
Orillia	Mrs. W. C. Goffatt	Mrs. J. P. Wells.
		Ass't., Miss Dora Harvie.
Shanty Bay	Mrs. Robert Robertson	Miss Marion H. Campbell.
Warminster	Mrs. Jos. Ball	Miss Pauline Donnelly.
Waubaushene	Mrs. C. P. Stocking	Mrs. C. J. Swartman.
Simcoe South—		
Churchill	Mrs. Jno. Todd, Lefroy	Mrs. H. Thomas.
Coulson's Hill	Mrs. Jas. Fennel, Bradford	Mrs. C. H. Wood, Bradford.
Ivy	Mrs. W. J. McLean	Mrs. T. R. Parker.
James Mills	Mrs. W. S. Fraser. Bradford	Miss E. Sinclair, Bradford.
Newton Robinson	Mrs. W. Rowe	Mrs. J. R. Chantler.
Stroud	Mrs. A. MacDonald, Palnswick.	Mrs. Angus Warnica, Craigvale.
Simcoe West—		
Avening	Mrs. Robt. Murray	Mrs. J. A. Carleton.
Batteau	Mrs. Gobiell	Miss Mildred Gordon.
Creemore	Mrs. F. E. Webster	Mrs. Archer Watson.
Duntroon	Mrs. P. McDermid	Mrs. D. J. McGregor.
Everett	Mrs. Herbert Ludlow	Miss Clara Ruthven, West Essa.
New Lowell	Mrs. J. Martin	Mrs. J. Switzer
Singhampton	Mrs. Geo. Ewing	Mrs. J. Shields.
		Treas., Mrs. N. McKinnon.
Sunnidale Corners	Miss Edythe Thompson	Miss Louise Raymer, Jacks Lake.
Stormont—		
Finch	Mrs. (Dr.) Marcellus	Mrs. J. McQuaig.
Union—		
Clifford	Mrs. J. R. Aitchison	Mrs. Jno. R. Scott.
Drew	Mrs. G. Crowe	Mrs. S. E. Donaldson.
Teviotdale	Mrs. Charles Wells, Cotswold.	Miss Barbara Darroch, Cotswold
Victoria East—		
Bobcaygeon	Mrs. T. M. Stewart	Mrs. Jos. J. Thurston.
Burnt River	Mrs. John Hodgson	Miss Minnie Dodd.
Cameron	Mrs. Wm. Harris	Mrs. W. Fell.
Dunsford	Mrs. Alex Burgess	Miss Etta Thurston.
Fenelon Falls	Mrs. Dr. Gould	Mrs. D. Jewell.
Kinmount	Mrs. E. A. White	Mrs. Alex Morrison.
Omemee	Mrs. Wm. Cottingham	Mrs. Norman H. Sutton.
Pleasant Valley	Mrs. Joseph Moynes, Fenelon Falls	Mrs. John Smitheran, Fenelon Falls.
Victoria West—		
Cambray	Mrs. Wm. Arksey	Mrs. F. Webster, R.M.D., Lindsay.
Islay	Mrs. H. Boyd	Miss L. M. Naylor.
Linden Valley	Mrs. John McElroy	Miss Kate McCorvie, Oakwood.
Lindsay	Mrs. G. A. Milne	Mrs. F. Crandall.
Little Britain	Mrs. Wesley Henderson	Mrs. C. Netherton.
Lorneville	Mrs. J. H. McEachren, Woodville	Miss A. McRae.
		Asst., Mrs. T. J. Newman.
Manilla	Mrs. (Dr.) McPhail	Mrs. Arch. McDonald, Cresswell.
Oakwood	Mrs. R. G. Webster	Mrs. M. Webster.
Sonya	Mrs. Jas. Watson	Mrs. M. H. Gilson.
Valentia	Mrs. C. W. Parkin	Mrs. F. A. Starr.
Woodville	Mrs. Jno. Campbell	Miss M. Ross.
Waterloo North—		
Conestogo	Mrs. J. G. Hurst	Mrs. Geo. A. Bowman.
Floradale	Mrs. Ed. Snyder	Miss Florence Snyder
Hawkesville	Mrs. Geo. F. Lackner	Miss Laura M. Lackner.
Linwood	Mrs. O. Schnurr	Miss Irene Berlet.
St. Jacob's	Mrs. E. Richmond	Miss Lydia Filsinger.
Wellesley	Mrs. H. K. Forler	Miss Lucinda Bellinger.
West Montrose	Mrs. Fred Letson	Miss Effie Letson
Winterbourne	Mrs. A. Brown, Sen.	Miss Jean W. Hamilton.

Institute.	President.	Secretary.
Waterloo South—		
Ayr	Miss Elizabeth D. Watson	Mrs. Guest.
Branchton	Mrs. Andrew Jenkins	Miss Annie Milroy, Galt.
Cedar Creek	Miss S. B. Moore, Box 235, Galt.	Miss Isabel Barrie, Galt.
Central Dumfries	Mrs. Neil McPherson, Galt	Miss Hanna Slater, Galt.
Galt	Mrs. Wm. Cole	Mrs. Thomas Rutherford.
Hespeler	Mrs. T. Shaw	Mrs. J. E. Klager.
New Dundee	Mrs. (Dr.) A. T. Rice	Miss Addie Copley.
Preston	Mrs. James Wood	Mrs. Frank W. Cornell.
Welland—		
Allanburg	Mrs. Peter Upper	Miss Jennie Johnson.
Bowen Road	Mrs. Jonas Zimmerman	Miss Maggie Merryweather.
	Bridgeburg	Bridgeburg.
Crowland	Mrs. J. A. Learn, Netherby	Mrs. J. A. Zavitz., Brookfield.
Humberstone	Mrs. A. Ramey	Miss Minnie Armstrong, Port Colborne.
Quaker Road	Mrs. E. E. Garner. Welland	Mrs. H. D. Rice, Welland.
Ridgeway	Mrs. Irvin Teal	Mrs. Orley Dell.
Stamford	Mrs. A. W. Marsh	Mrs. A. C. Pettit, Southend.
Stevensville	Mrs. George Sexsmith. Stone Quarry	Miss Beatrix E. Durham.
Welland	Mrs. H. Hobbs	Mrs. Herbert Sidey.
Willoughby	Mrs. Thos. Morrison. Chippawa.	Miss Louise Weaver, Chippawa.
Wellington Centre—		
Belwood	Mrs. W. Hutchinson	Mrs. W. W. Edwards.
Bethany	Mrs. B. Bye, Ponsonby	Miss M. F. Hall, Ariss.
Coningsby	Mrs. R. W. McKinnon	Miss Annie Burrows.
Cumnock	Mrs. W. J Stickney	Miss Ida Crabb, Fergus.
Erin	Mrs. Jas. McLachlan	Miss M. Young.
Hillsburg	Mrs. W. Robertson	Miss B. Harkness.
Marsville	Mrs. W. O. Nodwell, Reading	Mrs. D. Jestin.
Metz	Miss Pearl Spence	Mrs. Wm. Short.
Orton	Mrs. John King	Miss Mabel M. Heath.
Ospringe	Miss Mamie Hindley	Miss A. McCutcheon.
Wellington East—		
Arthur	Mrs. N. Bicknell	Mrs. P. Greig.
Cedarville	Mrs. C. C. Hockridge	Miss Susie Bently.
Colbeck	Mrs. James Holbarn	Mrs. Wm. McKinley, Monticello.
Conn	Mrs. H. McPherson	Miss Ella Sturdy.
Damascus	Miss Fanny Corbin, Arthur	Miss M. Anderson.
Grand Valley	Mrs. Grassett Smith	Miss S. J. Tebbutt, Box 36.
Kenilworth	Miss Gertrude Waters	Miss Myrtle G. Langdon, Box 37.
Mount Forest	Mrs. J. J. Cook	Mrs. S. K. Stovel.
Wellington South—		
Aberfoyle (Puslinch)	Mrs. John Hohendel	Miss G. McLean.
Arkell	Miss A. Iles R.R. No. 3, Guelph	Miss E. Boal.
Everton	Mrs. Geo. Loree	Miss Fanny Benson.
Marden	Mrs. D. Martin, Elora Rd., Guelph	Miss Eliza Parkinson, R. R. No. 1, Guelph.
Paisley Block	Miss Alice Whitelaw, Guelph	Miss Alice Barber, Paisley Rd., Guelph.
Rockwood	Mrs. William Harris	Mrs. Geo. Peal.
Wellington West—		
Alma	Miss M. Muriel Clarke	Miss M. A. Rudd.
Drayton	Miss L. W. Noecker	Mrs. W. J. Shorter, Box 233.
Moorefield	Mrs. F. Short	Miss M. Welch.
Palmerston	Mrs. Wm. Reid	Mrs. Harry Burns.
Rothsay	Mrs. J. Fotheringham	Mrs. A. Corbett.
Wentworth North—		
Freelton	Mrs. Ed. Kirk	Miss Selena Purnell, Puslinch.
Kirkwall & Valens	Mrs. Jno. Lothian. Kirkwall	Miss Sadie Coburn, Valens,
Millgrove	Mrs. Edward Downey, R. R. No. 2	Miss Winnie Carey, R.R. No. 2.
Orkney	Miss E. Ottman	Miss Sarah Larmon.
Rockton	Mrs. Anthony George, West Flamboro	Miss B. M. Thompson.
Sheffield	Mrs. T. Main, R. M. No. 1, Troy.	Miss Lizzie M. Humphrey.
Waterdown	Mrs. John Langford	Miss Ethel Ryckman.

Institute.	President.	Secretary.
Wentworth North—Con.		
Westover	Mrs. Hezekiah Jamieson	Miss Beulah M. Shaver.
West Flamboro	Mrs. J. McK. Morden. Greensville	Mrs. J. F. Thompson.
Wentworth South—		
Ancaster	Mrs. R. S. Stevenson	Mrs. T. Brown.
Blackheath	Miss J. Gibson	Miss N. Blain.
Binbrook	Mrs. J. Muir	Mrs. W. J. Moore
Carluke	Mrs. Jno. A. Moffatt	Miss J. A. McClure.
Glanford	Miss Louise Shafer	Miss M. E. Dickenson. Box 58, R.R. No. 4, Hamilton—Carluke.
Hannon	Mrs. J. McKee	Mrs. C. E. Horning,
Jerseyville	Mrs. Lorne Wilson	Mrs. G. W. Bonham. Box 45, Copetown.
Mount Hamilton	Mrs. Adam Inch	Mrs. S. E. Grassie, 27 Summit Ave.
Stony Creek	Mrs. Clough, Sr.	Mrs. H. Church.
Tapleytown	Mrs. D. Horning	Mrs. Jas. Tufford.
Winona	Mrs. J. W. Smith	Mrs. A. Foran.
York East—		
Agincourt	Mrs. T. A. Paterson, Ellesmere	Miss Margaret Scott.
Box Grove	Mrs. William Tran, Cedar Grove	Miss Eva Reesor.
East Toronto	Mrs. Fenton, 44 Main St.	Mrs. A. E. Dunn, 33 Main St.
Highland Creek	Mrs. W. J. Morrish	Miss Beatrice Collins.
Markham	Mrs. R. A. Mason	Mrs. H. S. Adam.
Scarboro Jct.	Miss E. Reynolds, Danforth.	Mrs. W. R. Bell.
Stouffville	Mrs. Elias Hoover	Mrs. Fred Sylvester. Treas., Mrs. Byam.
Thornhill	Mrs. J. Martin	Mrs. D. W. Carruthers, Willowdale.
Victoria Square	Mrs. Walter Scott	Mrs. A. E. Jennings.
York North—		
Aurora	Mrs. A. A. Conover	Miss L. A. Reynolds.
Keswick	Mrs. Friend Morton	Mrs. Jesse Stonehouse.
Kettleby	Mrs. Levi Watson	Miss Mary Elliot.
King	Mrs. J. A. McDonald	Miss Alice A. Ferguson.
Laskay	Miss Octavia McCallum, Strange	Mrs. Wm. Boys, Strange.
Mount Albert	Mrs. W. H. Shields	Miss L. Terry.
Newmarket	Miss Gulia Haight	Miss Emma D. Cleland.
Nobleton	Mrs. H. Thompson	Miss G. MacMurchy.
Queensville	Mrs. A. Milne	Mrs. S. Crann.
Schomberg	Mrs. Jas. Pearson	Mrs. Geo. Atkinson, Linton.
Vandorf	Mrs. Wm. Brown, Aurora.	Miss Grace Petch, Aurora.
York West—		
Elia	Mrs. G. Smithson	Mrs. J. E. Jackson.
Kleinburg & Nashville	Mrs. (Dr.) Robinson. Kleinburg.	Mrs. D. McDonald, Kleinburg.
Lambton Mills	Mrs. J. A. Lambie. Islington.	Mrs. R. H. Tier, Islington.
Maple	Mrs. H. C. Bailey	Miss Lydia Keffer.
Mimico	Mrs. E. Coxhead	Mrs. Robt. Watson, Albert Ave. Cor. Superior & Stanley Ave.
Thistletown	Mrs. Chas. Plunkett. Woodbridge.	Miss T. Kingdon.
Woodbridge	Mrs. W. O. Duncan. Emery	Miss Mary J. Burton.
Weston	Mrs. H. Coon	Miss Helen Grubb.

NORTHERN DISTRICTS.

Algoma Centre—		
Goulais Bay	Mrs. John Whalen	Mrs. Daniel W. James, Goulais River.
South Prince	Mrs. W. Anderson, Roundwood.	Mrs. R. Liddle, Sault Ste. Marie.
Tarentorous	Mrs. T. C. Dinsmore, Box 797, Sault Ste. Marie	Mrs. E. Figures. B. 568, Sault Ste. Marie.
West Korah	Mrs. C. Nixon, Box 577, Sault Ste. Marie	Miss Fannie Knight, B. 976, Sault Ste. Marie.
Algoma North Shore—		
Desbarats	Mrs. J. Hunter	Mrs. Matt. Haney.
Echo Bay	Mrs. W. Redman	Miss M. B. Osborne.
MacLennan	Mrs. Jas. Junor	Mrs. W. J. Nott.

Institute.	President.	Secretary.
Kenora—		
Barclay	Mrs. John Bicknell, Bedworth	Mrs. W. F. Bicknell, Bedworth
Dryden	Mrs. A. L. Orvis	Mrs. I. J. Clark.
Eagle River	Mrs. A. S. McKenzie	Mrs. N. Lucas.
Jaffray	Mrs. Sinclair, Kenora	Miss Frances Olcock, Kenora.
Oxdrift	Mrs. W. J. Robinson	Mrs. J. A. Reid.
Manitoulin East—		
Big Lake	Mrs. A. I. Brown	Mrs. Jas. E. Johnston.
Carnarvon (Providence Bay)	Mrs. A. Caddell, Providence Bay	Mrs. C. Lee, Providence Bay.
Green Bay	Mrs. John Noble	Miss Murtal Somerville
Little Current	Mrs. Turner	Mrs. J. Carruthers.
Mindemoya	Mrs. John King	Mrs. D. Caddel.
South Bay Mouth	Mrs. H. Bennett	Mrs. V. Wilman.
Tehkummah	Mrs. Geo. Hutchinson. Sandfield	Mrs. John Ward, Snowville.
Manitoulin West—		
Barrie Island	Mrs. G. A. Cole	Miss Emma Noble.
Gordon's	Mrs. Geo. Emiry, Gore Bay	Mrs. John Gibson, Gore Bay.
Grimesthorpe	Mrs. Robt. Cranston, Spring Bay	Miss Sadie E. McColman.
Kagawong (Billings)	Mrs. D. Campbell	Mrs. R. F. Wyman.
Poplar	Mrs. Jno. Davis	Miss Maggie Robinson.
Silver Water	Mrs. H. Sims	Miss E. M. Edmonds.
Nipissing East—		
Calvin	Mrs. Wm. Leach, Eau Claire	Miss Rachel Stewart, Eau Claire.
Mattawa	Mrs. Wm. Bangs	Mrs. Herbert Hazelwood.
Nipissing West—		
Lee Valley	Mrs. J. W. Moore, Via Massey Station	Miss Mildred McMillan, Via Massey Station.
Warren	Miss M. J. Dubeau	
Parry Sound East—		
Emsdale	Mrs. J. Schell	Mrs. B. Passmore.
Golden Valley	Mrs. Walter Driver	Mrs. Arthur Shortland.
Granite Hill	Mrs. Jos. Booth, Commanda	Mrs. John Clarke.
Loring	Mrs. A. W. Sinclair	Miss M. Avery.
Magnetawan	Mrs. Jas. S. Fraborn	Mrs. D. B. Best.
Mecunoma	Mrs. F. N. Fowke	Miss Sophia Sohm.
Midlothian	Mrs. N. Wildfong	Miss E. Rousell.
Powassan	Miss Jennie Gough	Miss Teresa Gough.
Restoule	Mrs. George Kidd, Carr	Mrs. W. Edwards, Carr.
Ryerson	Mrs. W. Judd, Doe Lake	Mrs. Matthew Gilmour, Doe Lake
South River	Mrs. G. Windrum	Mrs. P. Bottomley.
Sundridge	Mrs. A. Anderson	Mrs. D. D. Gibbon.
Trout Creek	Mrs. T. F. Carr	Mrs. O. Byam. Treas., Mrs. C. Culpack.
Rainy River—		
Barnhart	Mrs. George Watson	Mrs. Caroline Sanderson.
Barwick	Mrs. W. Clink	Mrs. I. Fearon.
Big Fork	Mrs. Tattrie	Miss Francis O'Connell.
Black Hawke	Mrs. Duncan Campbell	Miss Tillie Ottosen
Burriss	Mrs. C. H. Gadd, Wasaw	Mrs. W. W. Shinkle.
Emo	Mrs. Thos Macdonald	Mrs. John Durand.
Shenston	Mrs. Mary Anderson	Mrs. A. B. Anderson, Stratton Station.
Stratton	Mrs. M. L. Robertson	Mrs. Alex. Anderson, Box 12.
St. Joseph Island—		
Kentvale (Harmony)	Mrs. Charles Cooper, Harmony	Mrs. F. B. Kent, Harmony.
Richard's Landing	Mrs. W. R. Lay	Mrs. G. S. Lay.
Temiscamingue—		
Bucke Township	Mrs John Nestron, Haileybury	Mrs. Herbert L. Lyttle, Haileybury.
Charlton		Mrs. J. McAuley.
Chester's Corners	Mrs. Ernest Alexander, New Liskeard	Miss Maud Chester, New Liskeard.

Institute.	President.	Secretary.
Temiscamingue—Con.		
Hanbury	Mrs. E. Males	Mrs. H. R. Baker.
Heaslip	Mrs. Kerr	Mrs. Elmer Heaslip.
Hilllardton	Mrs. Donald McNair	Mrs. Alex. T. Shelp.
Hillview	Mrs. James Hall	Miss Alta Snider.
Earlton	Mrs. W. T. Cummer	Mrs. J. W. Jarvis.
Milberta	Mrs. J. R. Philp	Mrs. G. Ferguson.
New Liskeard	Mrs. Jas. L. Brown	Mrs. J. R. McCrea.
North Cobalt	Mrs. D. Dugan	Mrs. W. B. Archibald.
Thornloe	Mrs. Colin Campbell	Mrs. Ernest Edwards.
Uno Park	Mrs. R. Parker	Mrs. J. T. Welbourn.
Thunder Bay—		
Conmee	Mrs. W. Croves, Kakabeka Falls.	Mrs. John Carle, Kakabeka Falls.
Dorlon	Mrs. H. T. Bryan	Miss Gladys Vanderburgh.
Hymers	Mrs. J. H. Jones	Mrs. W. H. Jordan.
Murillo	Mrs. A. Boulter	Mrs. C. S. Merkley.
O'Connor	Mrs. P. Laird	Mrs. C. E. Hill
Port Arthur	Mrs. G. H. Slipper. 42 S. Algoma St.	Mrs. M. Shanbacher, 310 Fort St.
Slate River Valley	Mrs. F. Perry, Slate River	Miss M. Babcock, Slate River.
South Gillies	Mrs. Robt. Saunders	Mrs. Wm. Couch.
West Ft. William	Mrs. Jas. Gowanlock	Mrs. F. Findlay, 126 Dease St.

REPORT

OF THE

WOMEN'S INSTITUTES

OF THE

Province of Ontario

1911

PART II.

List of Meetings and Speakers

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

PRINTED BY ORDER OF
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TORONTO

WOMEN'S INSTITUTES OF ONTARIO.

ANNOUNCEMENT OF SUPERINTENDENT, 1911.

The Women's Institute report is published in two volumes: Part I., containing proceedings of our annual convention, papers specially prepared for the report, and the yearly statistical statement: and Part II., announcing the summer series of meetings, 618 in all, and lecturers therefor.

A series of three hundred and fifty to four hundred Women's Institute meetings are held during the winter months each year in conjunction with Farmers' Institutes.

Evidence of the ever widening field of work undertaken by the Institutes is shown by the greater variety of topics of general interest announced from year to year. The Institutes are "doing things." While the lectures, papers and discussions from month to month by the members of the individual branches show evidence of study, care, and ability on the part of those who participate in the meetings. it is particularly gratifying to note the larger outlook which the members have from year to year; they are not only interesting themselves in household matters, but are devoting more attention to those things which affect the community as a whole. Libraries are being established; halls for the holding of meetings and to be used as rest rooms are being secured, either by rent or purchase; encouragement is being given to the school children in growing vegetables and flowers; local councils are being encouraged to expend money in beautifying the streets; child study is receiving more attention; life problems are dealt with, and many other matters of vital and general interest are receiving consideration.

We now have organizations at 634 places, representing 98 electoral districts, with a total membership of over 16.000. The attendance in 1909-10 was 140.000, with every prospect of the number being increased for 1910-11.

Advice to District Officers.

The District Officers are held responsible for the following:—

(*a*) Arrange for date and place of district annual meeting in accordance with the wishes of the majority of the branches. Advertise this thoroughly by sending notice to the representatives appointed by the various branches as well as to the secretary of each branch. This meeting should be held not later than the 20th of June.

(*b*) Advertise all meetings included in summer series. See pages 39 and 40 of Hand Book for directions.

(*c*) Arrange a definite programme for each point. Only one speaker will be furnished for the great majority of meetings. It will, therefore, be necessary to furnish some local assistance. It would be well for one of the district officers to give a short address at each place of meeting. A short paper or address from some local person upon a subject of general interest to the members should be arranged for and one or two selections of music as well.

Advertise for a definite hour, say, 2 or 2.30 p.m.; and, if an evening session is desired, 8 p.m., and start the meeting at the time announced.

One session is preferable to two. We strongly advocate an afternoon meeting only.

Have a definite understanding with the officers at each point as to method and extent of advertising.

Utilize the local papers in advertising.

See that definite announcements are made in all advertisements as to hall or other place of meeting at each point to be visited.

Make your announcement for each session as full as possible, *i.e.*, give the names of the speakers and the topics to be taken up by them.

In some places it is not necessary to get out large posters to advertise the meetings. In many sections, however, the large poster will result in a much increased attendance.

When meetings are announced for places at which there is no organization, pay special attention to the matter of advertising. Secure some local persons to assist you and become responsible for hall, entertainment, etc.

(*d*) Arrange for transportation and entertainment of the delegate or delegates sent to the summer series of meetings, except from Saturday night to Monday morning and when travelling between ridings. In making arrangements for transportation. please keep in view the route which will likely be taken by the delegate in reaching the place to be first visited after leaving your riding.

Send copies of advertising material to the delegate or delegates and notify them as to what arrangement has been made for transportation between places in the ridings and how to reach the first place of meeting.

Notify the delegate as to when and where she will be met by the district officer or officers.

Advice to Branch Officers.

Give your district secretary full particulars regarding arrangements for your local meeting, indicating the addresses, musical selections, or the assistance which will be given the delegate; also let the district secretary know what advertising you are prepared to do locally. See pages 39 and 40 of the Hand Book for advice regarding advertising. Do not fail to have your members give invitations to other women in the district to attend the meetings.

The branch is responsible for the entertainment of the delegates, and it may be that you can render assistance in the transportation of delegates as well. Notify the district secretary as to what you are prepared to do.

See that the hall in which the meeting is to be held is properly cleaned, lighted and ventilated.

Write direct to delegate at least two weeks before your meeting is to be held, at her home address, or at some point in the series of meetings, notifying her of the topics chosen for your local meeting. Notify the delegate as to what provision has been made for her entertainment.

When only one delegate is furnished by the Department, it is advisable to have only the one session, an afternoon meeting. Two sessions will be allowed only upon condition that considerable assistance is given at the evening meeting.

Delegates are not prepared to attend Saturday evening meetings.

Lunches and picnics are an enjoyable feature of the summer meetings. The delegates should, however, be given an opportunity for proper rest and regular meals.

Make definite arrangements for your branch annual meeting to be held at least two weeks before the district annual; and see to it that a report of the meeting, together with the names of the representatives appointed to attend the district annual meeting, is sent to the district secretary at least ten days before date of district annual meeting.

It is well for Institutes located near each other not to choose the same subjects, and thus encourage visiting among adjoining Institutes.

Those Institutes which have printed programmes of the monthly meetings should send one to the delegate, in order that she may know the nature of the work done and thus be in a position to give advice as to ways and means of making the work of greater interest and value. It would also be well to inform the delegate as to some of the needs and difficulties in connection with the Institute.

General Notes.

Ask questions at the meeting, not afterwards: then all will get the benefit of the answers.

Bring notebooks and pencils with you.

If the Institute has been a benefit to you, ask others to join.

You cannot expect to have successful meetings without advertising thoroughly.

Do not advertise meetings for Saturday evenings.

Women and girls over fourteen will be made welcome at the afternoon meetings. Both sexes of all ages are invited to the evening sessions.

The delegates who will attend the summer series of meetings will meet together at some central point some time during May, with a view to receiving instruction regarding the work in hand and to derive benefit from a general conference among those who have had experience in the field. An exchange of opinion and ideas on the part of the workers, and a more general understanding as to the policy of the Department will tend to make the coming series of more than usual benefit to the members.

While the Department and delegates have an important part to perform in making the summer series a success, a great responsibility rests upon the local officers in thoroughly advertising the meetings and in urging the members and their friends to attend. Do not fail to let the delegates know what arrangements have been made.

Geo. A. Putnam,
Superintendent.

Parliament Buildings, Toronto.
April, 1911.

Summer Series of Women's Institute Meetings, 1911

Afternoon sessions will, for the most part, be held at 2 or 2.30 o'clock, and evening sessions at 8 o'clock. The officers of the Institutes concerned, however, have the privilege of choosing the exact hour and making local announcements accordingly. "Aft" indicates an afternoon session only—"Eve" an evening session only. At other places it is expected an afternoon session will be held, and possibly an evening session. Readers are referred to local announcements for full particulars as to speakers, subjects, hour of meeting, etc.

Division 1.—Mrs. W. B. Ferguson, Strathroy, May 29 to July 4.
Miss E. Robson, Ilderton, May 29 to June 7.
Miss R. A. Walsh, Orono, June 19 to 23.

1	Stamford	Welland		May	29
2	Allanburg, Town Hall	"	aft.	"	30
3	Quaker Road, Schoolhouse	"	aft.	"	31
4	Welland, Town Hall or Y. M. C. A.	"	aft.	June	1
5	Crowland, Town Hall	"	aft.	"	2
6	Willoughby, Township Hall	"	aft.	"	3
7	Bowen Road, Schoolhouse	"	aft.	"	5
8	Ridgeway, Library Room	"	aft.	"	6
9	Humberstone, Town Hall	"	aft.	"	7
10	Smithville, Brant's Hall	Monck		"	8
11	Rosedene, Mrs. C. Wills' Home	"	aft.	"	9
12	Fenwick, Public School	"		"	10
13	Wellandport, Misener's Hall	"	aft.	"	12
14	Winger, Disciple Church	"		"	13
15	Canboro, Church	"		"	14
16	Dunnville	"	aft.	"	15
17	Canfield, Methodist Church	Haldimand	aft.	"	16
18	York, S. S. Hall	"		"	17
19	Caledonia	"	aft.	"	19
20	Cayuga, Court House	"		"	20
21	Decewsville, Public Hall	"	aft.	"	21
22	Gill, Methodist Church	"		"	22
23	Clanbrassil, Church	"		"	23
24	Springvale, C. O. C. F. Hall	"		"	24
25	Garnet, Orange Hall	"		"	26
26	Jarvis	"	aft.	"	27
27	Erie	"	aft.	"	28
28	Sandusk, Mrs. F. Pond's Home	"	aft.	"	29
29	Nanticoke	"		"	30
30	Cheapside, C. O. C. F. Hall	"	aft.	July	3
31	Selkirk, Baptist Church	"	eve.	"	3
32	Rainham Centre, Town Hall	"		"	4

Division 2.—Dr. Margaret McAlpine, Toronto, May 29 to June 7; June 12 to 22; June 26 to July 4.
Dr. L. S. M. Hamilton, Toronto, June 8, 9, 10, 22, 23, 24.

1	Niagara-on-the-Lake	Lincoln		May	29
2	Queenston, Miss Prest's home	"	aft.	"	30
3	Jordan, Mrs. Overholt's home	"	aft.	"	31
4	Beamsville, Reception Hall	"	aft.	June	1
5	Grimsby, Hall	"	aft.	"	2
6	Winona	South Wentworth	aft.	"	3
7	Stoney Creek, Council Chamber	" "	aft.	"	5
8	Hannon, Mrs. H. Glover's home	" "	aft	"	6
9	Binbrook, Temperance Hall	" "	aft.	"	7
10	Blackheath	" "	aft.	"	8
11	Glanford, Mt. Hope Meth. S. S. Room	" "	aft.	"	9
12	Tapleytown	" "		"	10

13	Ancaster	South Wentworth		June	12
14	Jerseyville, Lee's Hall	" "	aft.	"	13
15	Mt. Hamilton, Mrs. A. Inch's home	" "	aft.	"	14
16	Waterdown, McGregor's Hall	North Wentworth	aft.	"	15
17	Millgrove, private residence	" "	aft.	"	16
18	Kirkwall, Mrs. Jno. McQueen's home	" "		"	17
19	Freelton, Mrs. (Dr.) McQueen's home	" "	aft.	"	19
20	Sheffield, Odd Fellows' Hall	" "		"	20
21	Orkney, Odd Fellows' Hall	" "	aft.	"	21
22	W. Flamboro, Mrs. E. McPherson's home	" "	aft.	"	22
23	St. George, Mrs. Wm. Kerr's home	North Brant	aft.	"	23
24	Glen Morris, Foresters' Hall	" "	aft.	"	24
25	Paris, New Central School	" "	aft.	"	26
26	Tranquility, Mrs. J. Hurley's home	" "	aft.	"	27
27	Cainsville, Orange Hall	" "		"	28
28	Onondaga, Mrs. C. Edward's home	" "		"	29
29	Langford, Mrs. E. R. Lang's home	" "	aft.	"	30
30	Brantford, R. R. Birkett's home	" "		July	3
31	Middleport	" "		"	4

DIVISION 3.—Miss Helen McMurchie, Harriston, May 29 to July 4.
Mrs. E. B. McTurk, Lucan, June 9 to 14.

1	Iona, Baptist Church	West Elgin	aft.	May	29
2	Dutton, Fletcher's Hall	" "	aft.	"	30
3	Rodney, Whutton's Hall	" "	aft.	"	31
4	Highgate, Methodist Church	East Kent		June	1
5	Guilds, Mrs. Flint's home	" "	aft.	"	2
6	Botany, Presbyterian S. S. Room	" "		"	3
7	Thamesville, I. O. O. F. Hall	" "	aft.	"	5
8	Croton, Young's Hall	" "	aft.	"	6
9	Wabash, Mrs. H. Robertson's home	" "	aft.	"	7
10	Kent Bridge, Langford's Hall	" "	aft.	"	8
11	Eberts, Township Hall	West Kent	aft.	"	9
12	Irwin, Union Hall	" "	aft.	"	10
13	Valetta, Town Hall	" "	aft.	"	12
14	Quinn, Union Hall	" "		"	13
15	Tilbury	" "		"	14
16	Comber, Town Hall	North Essex	aft.	"	15
17	Staples, Orange Hall	" "	aft.	"	16
18	South Woodslee, Pembleton's Hall	" "	aft.	"	17
19	Maidstone, Schoolhouse	" "	eve.	"	19
20	Maidstone Cross, Town Hall	" "	aft.	"	20
21	Oldcastle, Town Hall	" "	aft.	"	21
22	Essex, Town Hall	South Essex	aft.	"	22
23	Amherstburg, Town Hall	" "	aft.	"	23
24	Harrow, Methodist Church	" "	aft.	"	24
25	Kingsville, Council Chamber	" "		"	26
26	Cottam, Forester's Hall	" "	aft.	"	27
27	Leamington, Council Chamber	" "		"	28
28	Wheatley	West Kent		"	29
29	Port Alma, Mrs. John Kerr's home	" "		"	30
30	Cedar Springs, Methodist Church	" "		July	3
31	Morpeth	East Kent		"	4

DIVISION 4.—Dr. Annie Backus, Aylmer, May 29 to July 3.
Miss H. Gowsell, Corbyville, May 29 to July 3.

1	Princeton, Forester's Hall	North Oxford	aft.	May	29
2	Drumbo, Town Hall	" "	aft.	"	30
3	Plattsville, Methodist S. S. Room	" "	aft.	"	31
4	Bright	" "		June	1
5	Cassel	" "		"	2
6	Braemar, Gospel Hall	" "	aft.	"	3
7	Embro, Library Town Hall	" "	aft.	"	5
8	Harrington	" "		"	6
9	Lakeside, Hall	" "	aft.	"	7
10	Kintore, I. O. O. F. Hall	" "		"	8
11	Thamesford, Mrs. A. Wallace's home	" "	aft.	"	9

12	Beachville, Library Hall	South Oxford		aft.	June 10
13	Curries, Methodist Church	"	"	aft.	" 12
14	Burgessville, Mrs. R. Siple's home	"	"	aft.	" 13
15	Norwich, Presbyterian Church	"	"	aft.	" 14
16	Tillsonburg, Scollard's Grove	"	"	aft.	" 15
17	Folden's, Methodist Church	"	"	aft.	" 16
18	Mount Elgin, Methodist Church	"	"	aft.	" 17
19	Guysboro, Orange Hall	North Norfolk			" 19
20	Courtland, Town Hall	"	"	aft.	" 20
21	Delhi	"	"		" 21
22	Simcoe, Council Chamber	"	"	aft.	" 22
23	Windham Centre	"	"		" 23
24	Springfield	East Elgin			" 24
25	Lyons, Town Hall	"	"		" 26
26	Mapleton, Mrs. C. King's home	"	"	aft.	" 27
27	Aylmer, Council Chamber	"	"		" 28
28	Bayham, Church	"	"		" 29
29	Luton, Church	"	"		" 30
30	Grovesend, Church	"	"	aft.	July 3

Division 5.—Mrs. Jean Joy, Toronto, May 29 to June 12.
Mrs. M. Norman, Toronto, May 29 to June 3; June 12 to 29.

1	Petrolea, Council Room	West Lambton		eve.	May 29
2	Oil Springs, Methodist Church	"	"	eve.	" 30
3	Bridgen, Taylor's Hall	"	"	aft.	" 31
4	Colinville, C. O. F. Hall	"	"	eve.	June 1
5	Osborne, Mrs. Rainsberry's home	"	"	aft.	" 2
6	Lucasville, Mrs. F. C. Kewley's home	"	"	aft.	" 3
7	Wilkesport, Methodist Church	"	"	aft.	" 5
8	Thornyhurst	"	"	aft	" 6
9	Beecher, Foresters' Hall	"	"		" 6
10	Rutherford, Town Hall	"	"	eve.	" 7
11	Oakdale, Presbyterian Church	"	"	eve.	" 8
12	Appin, Orange Hall	West Middlesex		aft.	" 9
13	Napier, Town Hall	"	"	aft.	" 10
14	Kerwood, I. O. O. F. Hall	"	"	aft.	" 12
15	Strathroy, St. John's Hall	"	"	aft.	" 13
16	Lobo	North Middlesex			" 14
17	Coldstream, Town Hall	"	"		" 15
18	Beechwood, Foresters' Hall	"	"	aft.	" 16
19	Ailsa Craig	"	"		" 17
20	Wellburn	East Middlesex		aft.	" 19
21	Thorndale, Hardings Hall	"	"		" 20
22	Crompton	"	"		" 21
23	Harrietsville, Mrs. J. Jelly's home	"	"	aft.	" 22
24	Hyde Park	"	"	aft.	" 23
25	Lucan, Carlisle Parish Hall	North Middlesex		eve.	" 24
26	Mooresville, Hall	"	"	aft.	" 26
27	Greenway, Wilson's Hall	"	"	aft.	" 27
28	Sylvan, Miss N. Ronald's home	"	"	aft.	" 28
29	Parkhill, Institute Room	"	"		" 29

Division 6.—Dr. Jennie Smillie, Toronto, May 29 to June 8; June 16 to July 3.
Dr. L. S. M. Hamilton, Toronto, June 12 to 15.
Mrs. Kenyon Lett, Cobourg, June 23 to July 3.

1	Trafalgar, Town Hall	Halton		aft.	May 29
2	Palermo, Methodist Church	"			" 30
3	Burlington, Library	"		aft.	" 31
4	Nelson, Town Hall	"		aft.	June 1
5	Kilbride, { Mrs. Sutherland's home	"		aft.	" 2
	Kilbride, { McGregor's Hall	"		eve.	" 2
6	Georgetown, Town Hall	"		aft.	" 3
7	Norval, Orange Hall	"		aft.	" 5
8	Ballinafad, Town Hall	"		aft.	" 6
9	Acton, Town Hall	"		aft.	" 7
10	Arkell, School House	South Wellington		eve.	" 8
11	Ospringe, Schoolhouse	Centre Wellington			" 12
12	Coningsby, Schoolhouse	"	"	aft.	" 13
13	Erin, Women's Institute Hall	"	"	aft.	" 14

14	Hillsburg, Workman's Hall	Centre	Wellington	aft.	June	15
15	Marsville, Orange Hall	"	"	aft.	"	16
16	Orton, Methodist Church	"	"	aft.	"	17
17	Belwood, Town Hall	"	"	aft.	"	19
18	Bethany, Methodist Church	"	"	aft.	"	20
19	Cumnock, Presbyterian Church	"	"	aft.	"	21
20	Metz, Presbyterian Church	"	"	aft.	"	22
21	Arthur, Council Chamber	East	Wellington	aft.	"	23
22	Damascus, Township Hall	"	"	aft.	"	24
23	Kenilworth, Schoolhouse	"	"	aft.	"	26
24	Mount Forest, Allen's Hall	"	"	aft.	"	27
25	Conn, Orange Hall	"	"	aft.	"	28
26	Cedarville, Orange Hall	"	"		"	29
27	Colbeck	"	"	aft.	"	30
28	Monticello	"	"	eve.	"	30
29	Grand Valley, Hall	"	"		July	3

Division 7.—Mrs. Horace W. Parsons, Forest.

1	Mimico	West	York	eve.	May	29
2	Islington, Mrs. Lambie's home	"	"	aft.	"	30
3	Weston, Town Hall	"	"		"	31
4	Thistleton, Town Hall	"	"	aft.	June	1
5	Elia, Mrs. G. Smithson's home	"	"	aft.	"	2
6	Maple, Mrs. H. C. Bailey's home	"	"	aft.	"	3
7	Woodbridge	"	"	aft.	"	5
8	Kleinburg, Mrs. Wm. Mullen's home	"	"	aft.	"	6
9	Mono Road	Peel			"	7
10	Palgrave, Clarke's Hotel	"		aft.	"	8
11	Mono Mills	"			"	9
12	Alton, Science Hall	"		aft.	"	10
13	Belfountain, Hall	"		aft.	"	12
14	Cheltenham, Mrs. Alex. Hunter's home	"		aft.	"	13
15	Brampton, Hall	"		aft.	"	14
16	Malton	"		aft.	"	15
17	Port Credit, Public Library	"		aft.	"	16
18	Ayr, Foresters' Hall	South	Waterloo	aft.	"	17
19	Central Dumfries	"	"	aft.	"	19
20	Cedar Creek	"	"	aft.	"	20
21	Branchton, Foresters' Hall	"	"	aft.	"	21
22	Galt, I. O. F. Hall	"	"	aft.	"	22
23	Hespeler, Institute Hall	"	"	aft.	"	23
24	Preston, Hall	"	"	aft.	"	24
25	New Dundee	"	"	aft.	"	26
26	Wellesley, Town Hall Annex	North	Waterloo	aft.	"	27
27	Linwood, Town Hall	"	"		"	28
28	Hawkesville, Ballard's Hall	"	"		"	29
29	St. Jacobs, Mrs. Filsinger's home	"	"	aft.	"	30
30	Conestogo, Township Hall	"	"		July	3
31	Winterbourne, St. Andrews Hall	"	"	aft.	"	4
32	Floradale	"	"		"	5

Division 8.—Miss M. V. Powell, Whitby, May 30 to July 6.
Miss R. A. Walsh, Orono, June 14 to 17.

1	Ohsweken, Council Chamber	South	Brant		May	30
2	East Oakland, Private Residence	"	"	aft.	"	31
3	Scotland, Private Residence	"	"		June	1
4	Mohawk, Private Residence	"	"		"	2
5	New Durham, Private Residence	"	"		"	3
6	Cathcart, Kelley's Hall	"	"		"	5
7	Burford, Rutherford's Hall	"	"		"	6
9	Falkland, Halbert's Hall	"	"		"	7
9	Tavistock, Society Hall	South	Perth	aft.	"	8
10	St. Mary's, Town Hall	"	"		"	9
11	Sebringville, Mrs. E. Merner's home	"	"	aft.	"	10
12	Staffa, Town Hall	"	"		"	12
13	Mitchell, Town Hall	"	"	aft.	"	13
14	Hamstead, Private House	North	Perth		"	14

15	Listowel, { Private House	North Perth		aft.	June 15
	Listowel, { Schoolhouse	"	"	eve.	" 15
16	Milverton, Library Hall	"	"		" 16
17	Millbank, Private House	"	"		" 17
18	Palmerston, Anderson's Hall	West Wellington		aft.	" 19
19	Drayton, Council Chamber	"	"	aft.	" 20
20	Rothsay, Orange Hall	"	"	aft.	" 21
21	Teviotdale, Cotswold Schoolhouse	Union		aft.	" 22
22	Clifford, Town Hall	"		aft.	" 23
23	Drew, Temperance Hall	"		aft.	" 24
24	Ayton, Schoolhouse	South Grey		aft.	" 26
25	Hanover, Miller's Hall	"	"		" 27
26	Elmwood, Mrs. Durstein's home	"	"	aft.	" 28
27	Louise, Hall	"	"	aft.	" 29
28	Holstein, Robert's Hall	"	"	aft.	" 30
29	Robb, Mrs. I. Robb	"	"	eve.	July 3
30	Dromore, Russel Hall	"	"	aft.	" 4
31	Durham, Town Hall	"	"	aft.	" 5
33	Kirkton, Aberdeen Hall	South Perth		aft.	July 6

DIVISION 9.—Miss M. Hotson, Parkhill, May 29 to July 4.
Mrs. E. B. McTurk, Lucan, May 29 to June 6.

1	Goderich, Mrs. McKinnon's home	West Huron		aft.	May 29
2	Holmesville, Holmes Hall	"	"	eve.	" 30
3	Londesboro, Mrs. Hamm's home	"	"		" 31
4	Blyth, Dr. Milne's Hall	"	"	eve.	June 1
5	St. Augustine, Hall	"	"	aft.	" 2
6	Wingham, Council Chamber	"	"	aft.	" 3
7	St. Helens, Hall	"	"		" 5
8	Kintail, Lakeview Park	"	"		" 6
9	Lucknow, Mrs. J. Button's Lawn	South Bruce		aft.	" 7
10	Ripley, Town Hall	Centre Bruce		aft.	" 8
11	Bervie, Hotel	"	"	aft.	" 9
12	Kincardine, Council Chamber	"	"	aft	" 10
13	Belgrave	East Huron		aft.	" 12
14	Brussels, Carnegie Library	"	"		" 13
15	Walton, A. O. U. W. Hall	"	"	aft.	" 14
16	Ethel, Township Hall	"	"		" 15
17	Molesworth, Orange Hall	"	"	aft.	" 16
18	Jamestown	"	"		" 17
19	Bluevale, Foresters' Hall	"	"		" 19
20	Teeswater	South Bruce			" 20
21	Gorrie, Town Hall	East Huron			" 21
22	Fordwich, Brown's Hall	"	"	aft.	" 22
23	Milldmay, Town Hall	South Bruce		aft.	" 23
24	Walkerton, Private House	"	"	aft.	" 24
25	Paisley, Town Hall	Centre Bruce		aft.	" 26
26	Chesley, Brehn's Hall	"	"		" 27
27	Williscroft, Baptist Church	"	"		" 28
28	Port Elgin, Public Library	West Bruce			" 29
29	Arkwright, Town Hall	"	"	aft.	" 30
30	Tara, Council Chamber	"	"		July 3
31	Allenford, Methodist Church	"	"		" 4

DIVISION 10.—Miss B. Gilholm, Bright.

1	Dundalk	Centre Grey		aft.	May 29
2	Hopeville, McArdle's Hall	"	"		" 30
3	Badjeros, Schoolhouse	"	"		" 31
4	Maxwell, Methodist Church	"	"		June 1
5	Eugenia, Presbyterian Church	"	"		" 2
6	Flesherton, Artemesia Hall	"	"	aft.	" 3
7	Priceville, Watson's Hall	"	"		" 5
8	Vandeleur, Foresters' Hall	"	"		" 6
9	Kimberley, Orange Hall	"	"		" 7
10	Markdale, Haskett's Hall	"	"		" 8
11	Williamsford, Maccabees' Hall	"	"		" 9
12	Walter's Falls, Orange Hall	"	"		" 10

13	Rocklyn, Agric. Hall	Centre Grey			June	12
14	Heathcote, Orange Hall	"	"		"	13
15	Clarksburg, Hall	"	"	eve.	"	14
16	Meaford, Town Hall	North Grey		aft.	"	15
17	Annan, Basement of Pres. Church	"	"		"	16
18	Brookholm, Basement of St. P. Ch.	"	"	aft.	"	17
19	Kemble, Library Hall	"	"	aft.	"	19
20	Desboro, Hall	"	"	aft.	"	20
21	Keady, Private House	"	"	aft.	"	21
22	Kilsyth, Township Hall	"	"		"	22
23	Hepworth, Mrs. Albert Jackson's home	North Bruce		aft.	"	23
24	Clavering, Schoolhouse	North Grey			"	24
25	Park Head, Mrs. T. G. Farrow's Home	North Bruce			"	26
26	Wiarton, Town Hall	"	"	aft.	"	27
27	Colpoy's Bay, Bell's Hall	"	"	aft.	"	28
28	Mar	"	"		"	29
29	Hope Bay, Schoolhouse	"	"	aft.	"	30
30	Lion's Head, Township Hall	"	"	aft.	July	3

Division 11.—Miss E. Smillie, Toronto, May 29 to July 6.
Dr. L. S. M. Hamilton, Toronto, May 29 to June 5.

1	Orangeville, Methodist Church Lecture Room	Dufferin		aft.	May	29
2	Blount	"			"	30
3	Camilla, Presbyterian Church	"			"	31
4	Whittington, Methodist Church	"		eve.	June	1
5	Laurel, Presbyterian Church	"			"	2
6	Bowling Green, Mrs. J. Connor's house	"			"	3
7	Shelburne	"			"	5
8	Keldon, Church Hall	"			"	6
9	Corbetton, Presbyterian Church	"			"	7
10	Horning's Mills, Church Basement	"			"	8
11	Honeywood, Methodist Church Basement	"			"	9
12	Everett, Orange Hall	West Simcoe			"	10
13	Avening, Schoolhouse	"	"		"	12
14	Creemore, Methodist School Room	"	"		"	13
15	Duntroon, Bridge's Hall	"	"	aft.	"	14
16	Singhampton, Ross's Hall	"	"	aft.	"	15
17	Batteau, The Cottage	"	"		"	16
18	Sunnidale Corners, Mill's Hall	"	"		"	17
19	Stroud, Mrs. L. Webb's home	South Simcoe			"	19
20	Churchill, Orange Hall	"	"		"	20
21	Coulson's Hill, Basement of Church	"	"	aft.	"	21
22	Bradford, Old Kirk, Scotch Line	"	"	aft.	"	22
23	Newton Robinson, Orange Hall	"	"	aft.	"	23
24	Ivy, Orange Hall	"	"		"	24
25	Crown Hill	East Simcoe			"	26
26	Shanty Bay, Temperance Hall	"	"	aft.	"	27
27	Hawkestone, Orange Hall	"	"	eve.	"	28
28	Orillia, St. James Schoolhouse	"	"	aft.	"	29
29	Ardtrea, Mrs. Thos. Swindle's home	"	"	eve.	"	29
30	Warminster, McKinley's Hall	"	"	aft.	"	30
31	Coldwater, Methodist S. Room	"	"	aft.	July	3
32	Waubaushene	"	"	aft.	"	4
33	Victoria Harbour	"	"	aft.	"	5
34	Midland	"	"	aft.	"	6

Division 12.—Mrs. F. W. Watts, Clinton.

1	Randolph, Mrs. Kavanagh's home	Centre Simcoe		aft.	May	29
2	Wyebridge, Lummis Hall	"	"		"	30
3	Wyevale, Orange Hall	"	"		"	31
4	Elmvale, Lance Hall	"	"		June	1
5	Allenwood, Methodist Church Basement	"	"	aft.	"	2
6	Silver Maple, Mrs. D. Jamieson, 2nd Line Floss	"	"	aft.	"	3
7	Crossland, Knox Hall	"	"		"	5
8	Phelpston, Shanahan's Hall	"	"		"	6
9	New Floss, Hisey's Hall	"	"		"	7
10	Edenvale, Hall	"	"		"	8

11	Minesing, Methodist Church	Centre	Simcoe		June	9
12	Dalston, Schoolhouse	"	"	eve.	"	10
13	Port Carling, Town Hall	South	Muskoka		"	12
14	Ufford, Schoolhouse	Centre	"		"	13
15	Bardsville, Mrs. Harry Scriven's home	South	"		"	14
16	Bracebridge, Mrs. Alex. Barron's home	"	"	aft.	"	15
17	Muskoka Falls, Schoolhouse	"	"	eve.	"	16
18	Reay, Presbyterian Church	"	"	aft.	"	17
19	Zephyr	"	"	eve.	"	19
20	Baysville, Town Hall	"	"	aft.	"	20
21	Utterson, Orange Hall	Centre	"	eve.	"	21
22	Allansville, Union Hall	"	"	aft.	"	22
23	Aspin	North	"	aft.	"	23
24	Ashworth, Town Hall	"	"		"	24
25	Ravenscliffe, Patron's Hall	"	"		"	26
26	Silverdale, Mrs. L. Spier's home	"	"	eve.	"	27
27	Brunel, No. 5 Schoolhouse	"	"		"	28
28	Birkendale, Fox Point	"	"		"	29
29	Dwight, Schoolhouse	"	"		"	30
30	Lafontaine	Centre	Simcoe		July	3

DIVISION 13.—Miss B. Millar, Guelph.

1	Nobleton, Mrs. H. Snider's home	North	York	aft.	May	29
2	Schomberg, Methodist Church Basement	"	"	aft.	"	30
3	Laskay, Hall	"	"	aft.	"	31
4	King, Hall's Hall	"	"	aft.	June	1
5	Newmarket, Mrs. Wm. Walker's home	"	"	aft.	"	2
6	Queensville, Presbyterian Hall	"	"	aft.	"	3
7	Keswick, Mrs. Wm. Mahoney's home	"	"	aft.	"	5
8	Mount Albert, Methodist S. S. Room	"	"	aft.	"	6
9	Vandorf, Mechanic's Hall	"	"	aft.	"	7
10	Aurora	"	"	eve.	"	7
11	Thornhill	East	York	aft.	"	8
12	East Toronto	"	"		"	9
13	Scarboro Junction	"	"		"	10
14	Highland Creek	"	"	aft.	"	12
15	Agincourt, Mrs. R. Patterson's home	"	"	aft.	"	13
16	Box Grove, Mrs. And. Reesor's home	"	"	aft.	"	14
17	Markham	"	"	aft.	"	15
18	Stouffville, Council Chamber	"	"	aft.	"	16
19	Kettleby, Temperance Hall	North	York	aft.	"	17
20	Goodwood, Town Hall	North	Ontario		"	19
21	Sandford, Mrs. Jno. Smith	"	"	aft.	"	20
22	Zephyr	"	"		"	21
23	Gamebridge, Grange Hall	"	"	aft.	"	22
24	Brechin, Mrs. M. Campbell's home	"	"	aft.	"	23
25	Claremont, Masonic Hall	South	Ontario	eve.	"	24
26	Brougham, Private House	"	"		"	26
27	Whitevale	"	"	aft.	"	27
28	Pickering, Private House	"	"	aft.	"	28
29	Columbus	"	"	aft.	"	29
30	Brooklin	"	"	aft.	"	30
31	Whitby, Agricultural Rooms	"	"	aft.	July	3
32	Shirley, Mrs. Wm. Byers' home	"	"	eve.	"	4
33	Altona, Hall	North	Ontario	aft.	July	5

DIVISION 14.—Mrs. W. J. Hunter, Pleasant, May 29 to July 6.
Miss May Allison, London, May 29 to June 10.

1	Kendall, Methodist S. S. Room	West	Durham	aft.	May	29
2	Orono, Council Room	"	"	aft.	"	30
3	Newtonville, S. S. Room	"	"	aft.	"	31
4	Charlecote, Mrs. M. G. Welsh's home	East	Durham	aft.	June	1
5	Garden Hill, Temperance Hall	"	"	aft.	"	2
6	Elizabethville	"	"	eve.	"	2
7	Port Hope, Board Room, Agric. Dept.	"	"	aft.	"	3
8	Bewdley, Church	"	"		"	5
9	Bailieboro, English Church S. S.	"	"	aft.	"	6
10	Millbrook, Town Hall	"	"	aft.	"	7

11	Manver's Station, Orange Hall	East Durham		aft.	June 8
12	Mount Pleasant, Temperance Hall	"	"	aft.	" 9
13	Springville, Sunday School Room	"	"		" 10
14	Cobourg, Mrs. I. Crozier's home	West Northumberland			" 12
15	Elmview	"	"		" 13
16	Grafton	"	"	aft.	" 14
17	Fenella, Village Hall	"	"		" 15
18	Roseneath, Village Hall	"	"	eve.	" 16
19	Warkworth, Town Hall	East Northumberland		aft.	" 17
20	Codrington, Orange Hall	"	"	eve.	" 19
21	Wooler, Methodist Church	"	"	aft.	" 20
22	Smithfield, Methodist Church	"	"	aft.	" 21
23	Dundonald, Hall	"	"	aft.	" 22
24	Castleton, Town Hall	"	"	aft.	" 23
25	Brighton, Brick Schoolhouse	"	"	aft.	" 24
26	Menie	"	"		" 26
27	Wellington, Mrs. Best's home	Prince Edward		aft.	" 27
28	Bloomfield, Methodist S. S. Rooms	"	"	aft.	" 28
29	West Lake, private house	"	"	aft.	" 29
30	Cherry Valley, Hall	"	"	aft.	" 30
31	Picton, School Room of Church	"	"	aft.	July 3
32	Gilbert's Mills, Doxsee's Church	"	"	aft.	" 4
33	Mountain View, Church	"	"	aft.	" 5
34	Rednersville, Redner's Hall	"	"	aft.	" 6

DIVISION 15.—Mrs. Thos. Shaw, Hespeler, May 29 to July 4.
Mrs. E. Hobson, Mt. Elgin, May 29 to June 5.
Mrs. J. Muldrew, MacDonald College, Que., June 27 to July 4.

1	Inverary, Agricultural Hall	Frontenac		aft.	May 29
2	Westbrooke, Hall	"		aft.	" 30
3	Stella, Town Hall	Amherst Island		aft.	" 31
4	Adolphustown, Town Hall	Lennox		aft.	June 1
5	Conway, A. O. U. W. Hall	"		aft.	" 2
6	Melrose, Town Hall	East Hastings		aft.	" 3
7	Belleville	"	"		" 5
8	Wallbridge, Methodist Church	West Hastings		aft.	" 6
9	River Valley, Schoolhouse	"	"	aft.	" 7
10	Frankford	"	"	eve.	" 7
11	Chatterton	"	"	aft.	" 8
12	Roslin, Women's Institute Hall	East Hastings			" 9
13	Tweed, Town Hall	"	"		" 10
14	Madoc, Town Hall	North Hastings		aft.	" 12
15	Queensboro, private house	"	"	aft.	" 13
16	Eldorado	"	"		" 14
17	Wellman's Corners, Orange Hall	"	"		" 15
18	Springbrook, Foresters' Hall	"	"	aft.	" 16
19	Marmora, Town Hall	"	"	aft.	" 17
20	Norwood	East Peterboro			" 19
21	Warsaw, Town Hall	"	"		" 20
22	Lakefield, Foresters' Hall	West Peterboro			" 21
23	Lindsay, Mrs. G. A. Milne's home	West Victoria		eve.	" 22
24	Little Britain	"	"		" 23
25	Valentia	"	"		" 24
26	Sonya	"	"		" 26
27	Manilla, Mrs. Jos. Tompson's home	"	"	aft.	" 27
28	Linden Valley, Hall	"	"		" 28
29	Cambray, Hall	"	"	aft.	" 29
30	Islay, Mrs. Wm. Wilson's home	"	"	eve.	" 30
31	Woodville, Mr. J. Naylor's home	"	"		July 3
32	Lorneville	"	"		" 4

DIVISION 16.—Miss L. Rose, Guelph.

1	Lansdowne	South Leeds			May 29
2	Seeley's Bay, Masonic Hall	"	"	aft.	" 30
3	Delta, Town Hall	"	"	eve.	" 31
4	Athens	Brockville			June 1
5	Newboro, Court House	South Leeds			" 2
6	Westport, Wesley Hall	"	"		" 3

7	Perth, Town Hall	South Lanark	aft.	"	5
8	Maberly	" "		"	6
9	Lanark, Town Hall	North Lanark		"	7
10	Merrickville, Girls' Guild Hall	North Leeds and Grenville	aft.	"	8
11	Carleton Place, Council Chamber	South Lanark	aft.	"	9
12	Almonte	North Lanark	eve.	"	10
13	Clayton	" "		"	12
14	Northcote	South Renfrew		"	13
15	Burnstown, Temperance Hall	" "	aft.	"	14
16	Galetta, Whyte's Hall	Carleton	eve.	"	15
17	Antrim, Town Hall	"	aft.	"	16
18	Carp	"		"	17
19	Stittsville, Harten's Hall	"	eve.	"	19
20	Vankleek Hill, Town Hall	Prescott	aft.	"	20
21	Winchester Springs, Orange Hall	Dundas	aft.	"	21
22	Morewood, Presbyterian Hall	"	aft.	"	22
23	Chesterville, Town Hall	"	aft.	"	23
24	Finch	Stormont		"	24
25	Maxville, King George Hall	Glengarry		"	26
26	Martintown, St. Andrews Hall	"	aft.	"	27
27	Morrisburg, Office Agric. Dept.	Dundas	aft.	"	28
28	Maynard	South Grenville	aft.	"	29

Division 17.—Mrs. W. W. Farley, Smithfield.
Mrs. Kenyon Lett, Cobourg, May 30 to June 16.

1	Omemee, Mrs. G. Balfour's home	East Victoria	aft.	May	30
2	Bobcaygeon, Parish Hall	" "	eve.	"	31
3	Dunsford	" "	aft.	June	1
4	Cameron, Methodist Church	" "	aft.	"	2
5	Pleasant Valley, Mrs. W. J. Moyne's home	" "	eve.	"	2
6	Fenelon Falls, Dickson's Hall	" "	aft.	"	3
7	Burnt River, Methodist Church	" "	aft.	"	5
8	Kinmount, Town Hall	" "	aft.	"	6
9	Minden, Town Hall	Haliburton	aft.	"	7
10	Haliburton, Town Hall	"	aft.	"	8
11	Irondale, Schoolhouse	"	aft.	"	9
12	Gooderham	"		"	10
13	Baucroft	North Hastings		"	13
14	L'Amable, Orange Hall	" "	eve.	"	14
15	Fort Stewart, Boehme's Hall	" "		"	15
16	Clydesdale, Schoolhouse	North Peterboro	aft.	"	17
17	Mt. Julian	" "		"	20

Northern Series of Farmers' and Women's Institute Meetings, 1911.

The meetings announced in Divisions 18, 19, 20 and 21 are held under the auspices of the Farmers' and Women's Institutes of the riding concerned. The hall, or other place of meeting, indicates the place of meeting for the afternoon session of the Farmers' Institute and the joint meetings of the Farmers' and Women's Institutes to be held immediately following the regular afternoon sessions of the two Institutes, or in the evening.

See local announcements for information regarding place of meeting, speakers and subjects chosen.

DIVISION 18.—Mrs. J. E. Brethour, Burford.
*Mr. Geo. H. Farmer, Steelton.

1	Burk's Falls	East Parry Sound*	May	29
2	Magnetawan	" "	"	30
3	Midlothian	" "	"	31
4	Doe Lake	" "	June	1
5	Emsdale	" "	"	2
6	Sundridge	" "	"	3
7	South River	" "	"	5
8	Rye	" "	"	6
9	Powassan, Town Hall	" "	"	7
10	Trout Creek	" "	"	8
11	Granite Hill	" "	"	9
12	Golden Valley	" "	"	10
13	Arnstein	" "	"	12
14	Loring	" "	"	13
15	Calvin	East Nipissing	"	15
16	Mattawa	" "	"	16
17	Haileybury (Buche Tp.)	Temiscamingue	"	19
18	New Liskeard, Carnegie Library	"	"	20
19	Milberta	"	"	21
20	Hillview	"	"	22
21	Uno Park	"	"	23
22	Hanbury	"	"	24
23	Thornloe	"	"	26
24	Earlton	"	"	27
25	Hilliardton	"	"	28
26	Tomstown	"	"	29
27	Heaslip	"	"	30
28	Charlton	"	July	3
29	Englehart		"	4
30	Clover Valley	"	"	5

DIVISION 19.—Mrs. M. Woelard, Toronto.
*Anson Groh, Preston.

1	Little Current	East Manitoulin	June	1
2	Sheguindah	" "	"	2
3	Green Bay	" "	"	3
4	Budges	" "	"	5
5	Manitowaning	" "	"	5
6	Hilly Grove	" "	"	6
7	Tehkummah	" "	"	7
8	South Baymouth (women, aft.)	" "	"	8
	Sandfield (men, aft.), joint evg. meeting	" "	"	8
9	Silver Bay (Big Lake)	" "	"	9
10	Mindemoya	" "	"	10
11	Carnarvon	" "	"	12
12	Grimesthorpe	West Manitoulin	"	13
13	Billings (Kagawong)	" "	"	14
14	Gordon's	" "	"	15
15	Barrie Island	" "	"	16
16	Poplar	" "	"	17
17	Silver Water	" "	"	19

*See pages 25 and 26 for information regarding gentlemen speakers.

18	Marksville	St. Joseph Island		June	22
19	Stone	"	"	"	23
20	Kentvale	"	"	"	24
21	Richard's Landing	"	"	"	26

DIVISION 20.—Miss B. Duncan, Toronto.
*David James, Thornhill.

1	Lee Valley	West Nipissing		June	1
2	Webbwood	"	"	"	2
3	Walford	East Algoma		"	3
4	Iron Bridge	"	"	"	5
5	Sowerby	"	"	"	6
6	Livingstone Creek	"	"	"	7
7	Little Rapids	"	"	"	8
8	Alma Heights	"	"	"	9
9	Cloudslee	"	"	"	10
10	Port Lock	"	"	"	12
11	Desbarats	North Shore Algoma		"	13
12	McLennan	"	"	"	14
13	Lidstone	"	"	"	15
14	Bar River	"	"	"	16
15	Sylvan Valley	"	"	"	17
16	Echo Bay	"	"	"	19
17	Garden River	"	"	"	20
18	Tarentorus	Centre Algoma		"	21
19	Base Line	"	"	"	22
20	South Prince	"	"	"	23
21	West Korah	"	"	"	24
22	Goulais Bay	"	"	"	26
23	Warren	West Nipissing		"	28
24	Sturgeon Falls	"	"	"	29
25	Woodlands	"	"	"	30

DIVISION 21.—Miss G. Gray, Toronto.
*Mr. Henry Grose, Lefroy.

1	West Fort William	Thunder Bay		June	2
2	Port Arthur	"	"	"	3
3	Slate River	"	"	"	5
4	Hymers	"	"	"	6
5	South Gillies	"	"	"	7
6	O'Connor	"	"	"	8
7	Conmee	"	"	aft. "	9
8	Kakabeka Falls	"	"	eve. "	9
9	Murillo	"	"	"	10
10	Dorion	"	"	"	12
11	Ouimet	"	"	"	13
12	Barclay	Wabigoon		"	15
13	Dryden, Hutchinson's Hall	"		"	16
14	Glengoland, S. H.	"		"	17
15	Oxdrift	"		"	19
16	Mannitaki	"		"	20
17	Eagle River	"		"	21
18	Kenora	Kenora		"	22
19	Jaffray	"		"	23
20	Sleeman	Rainy River		aft. "	27
21	Stratton	"	"	"	28
22	Shenston	"	"	aft. "	29
23	Barwick	"	"	"	30
24	Klondyke	"	"	aft. July	3
25	Emo	"	"	"	4
26	Barnhart	"	"	"	5
27	Big Fork	"	"	aft. "	6
28	Devlin	"	"	eve. "	6
29	Burriss	"	"	"	7
30	Isherwood	"	"	aft. "	8
31	Crozier	"	"	eve. "	8

*See pages 25 and 26 for information regarding gentlemen speakers.

Women's Institute Lecturers and their Subjects, 1911.

ALLISON, MISS MAY, 31 Beecher St., London.—Miss Allison is a teacher of wide experience in kindergarten work and has had exceptional opportunities for studying child nature. She has been active in the Mothers' Clubs of London, and for one season had charge of one of the playgrounds of Brooklyn, N.Y. Her subjects are such as will appeal to the mothers in connection with the Institutes.

Subjects:—

"Home Occupation for Country Children."
"The Growth of the Religious Nature in Childhood and Youth."
"Why Some Children are Brighter than Others."
"Beauty in the Home."

BACKUS, DR. ANNIE, Aylmer.—Dr. Backus brings her medical training and practice, as well as her experience in country life, and places them at the disposal of the women of the Province. She is eminently practical, ready and willing to help womankind. She has been closely identified with Institute work throughout the Province, and especially in her own riding, for seven or eight years. Dr. Backus will illustrate her lectures on "Physical Development of the Child" and "Poultry Raising" at the evening sessions by the use of stereopticon views.

Subjects:—

"Hygiene of the Home and Aids in Nursing."
"Consumption and its Prevention."
"The Importance and Meaning of Woman's Work."
"Training in the Home."
"Education of Girls."
"Physical and Mental Harm of Fault-finding."
"Poultry Raising."—Illustrated.
"The Physical Development of the Child."—Illustrated.

BRECKON, MRS. WATSON, Waterdown.—While Mrs. Breckon has been an active worker in the Institutes in her own locality, she has had the additional experience of attending as a regular delegate in other sections of the Province. Mrs. Breckon is thoroughly practical in her methods of giving instruction and her success as a home-maker and practical dressmaker insures valuable service to the Institutes.

Subjects:—

"Dressmaking—Cutting, Fitting, Sewing."—Demonstrated.
"Short Cuts in Home Sewing and Mending."—Demonstrated.
"Economical Housekeeping."
"Training in the Home."
"Teacher and Parent."

BRETHOUR, MRS. J. E., Burford.—Mrs. Brethour has been one of the most progressive and successful district officers, and has also given assistance to many of the Institutes surrounding Brant. She will be remembered as one who has taken part in our annual Convention and her advice and suggestions regarding Institute work will be found helpful. Her addresses are animated, interesting and instructive, and are specially helpful to those who are responsible as officers of the Institutes.

Subjects:—

"Simple Entertaining in the Country."
"Homely Wrinkles for Housekeepers."
"Is a Woman's Time Worth Anything?"
"The Evolution of the Country Woman."
"How to Make an Institute a Success."
"Books: Our Friends or Enemies?"

CAMPBELL, MISS S., Brampton.—Miss Campbell is one of those speakers who leave audiences enthusiastic in pursuing definite lines of work. She has a wide range of those subjects which are most needed by the woman and girl on the farm. Her success in extending the Women's Institute throughout Peel County has been most marked, and her advice to officers should prove of great value.

Subjects:—

"The Ideal Home."
"A Young Lady's Accomplishments."
"The Influence of Women."
"The Judicious Housekeeper and Homemaker."
"Home and School."
"Our Fair Dominion."
"Demonstrations in Needlework."
"Emergency Treatment."

DAWSON, MRS. W., London East.—Mrs. Dawson is a poultry woman of international reputation, and both the farmers' wives and townspeople would be much benefited by her practical talks along lines indicated in the following subjects:—

Subjects:—

"The Care and Feeding of Laying Hens."
"The Raising of Early Chicks."
"The Requirements of the Egg Market."

DUNCAN, MISS B., 5 Ridout St., Toronto.—In addition to her full course at the Hamilton School of Domestic Science some years ago, Miss Duncan has recently further qualified herself in a special course in dietetics at the Macdonald Institute, Guelph. Having had experience in both country and city life and the benefit of a number of years' work in connection with the Women's Institutes, Miss Duncan is in a position to give a practical application of her scientific knowledge to the homemakers of the Province.

Subjects:—

"Use of Food to the Body."—Illustrated by Chart.
"Diets Suitable for Different Ages and Occupations."
"Hints on Selecting and Caring for Meats."
"Everyday Helps for the Housewife."
"Dollars and Sense in the Household."

Evening.

"Girls and Their Ideals."
"Country Homes."
"Habits."

FARLEY, MRS. W. W., Smithfield.—Mrs. Farley is the mistress of a model country home and has been instrumental in organizing a number of branches in her district, East Northumberland. She has already attended a few Institute meetings as a Departmental delegate, and the appreciation expressed by the Institutes visited insures successful meetings where she is the speaker.

Subjects:—

"Home Nursing."
"Care and Training of Children in the Home."
"Helps Over Hard Places in the Household."
"Flowers for the Farm Home."
"Canning of Fruits, Vegetables and Meats in the Home."

Evening.

"The Macdonald Institute, Guelph."

FERGUSON, MRS. W. B., Strathroy.—Mrs. Ferguson, formerly Miss Agnes Smith, of Hamilton, since giving up work as a Departmental delegate some four or five years ago, has been active in the local organizations, and the Department is fortunate in securing her for a regular series of meetings this season. Scientific training in Domestic Science and Dairying, practical experience on the farm, and her ability to present information in a pleasing, forceful manner insures effective work on the part of Mrs. Ferguson.

Subjects:—

"The Conveniences and Labor-saving Devices We May Have in Our Homes."
"Butter Making in the Home."
"Health a Duty."
"The Place Our Institute May Fill in Our Lives."
"The Value and Power of the Ideal."
(*a*) In the Individual.
(*b*) In the Home.
(*c*) In the Community.

GILHOLM, MISS B., Bright.—Miss Gilholm has been an efficient officer of the District Women's Institute of North Oxford, and is able to render much assistance to officers of both district and branch Institutes. Miss Gilholm has taken the regular creamery course at the Guelph Dairy School and holds a specialist's certificate in buttermaking, as well as a diploma in the theory and art of buttermaking. Miss Gilholm's knowledge and appreciation of country life enables her to impart information in a manner much appreciated by the members in general.

Subjects:—

"The Plant and its Relation to the Dairyman."
"Will the Dairy Cow Remove the Mortgage?"
"Food Values and Uses of Milk."
"Thoughts of Old Friends and New."
"Canadian Women."

GOWSELL, MISS HATTIE M., Box 45, Foxboro.—Miss Gowsell is a teacher of some experience and has been active in local Institute work in Hastings County. She is now taking a course in Domestic Science at Columbia University.

Subjects:—

"The Education of Girls."
"Milk and Its Uses as a Food."
"Foods: Their Different Constituents."—Illustrated.
"Meats: Their Chemical Composition and Cooking."
"Diet for the Young and Old."

GRAY, MISS G., 650 Bathurst St., Toronto.—Miss Gray needs no introduction to the majority of Institute members in Ontario, as she has visited nearly all sections in which the work has been organized. She has devoted several seasons to Institute work in New York State. She is a thorough master of the subjects announced and presents her information in a clear, forceful and attractive manner.

Subjects:—

"Human Nutrition."—Illustrated by Food Chart.
"Cuts and Preparation of Meats."
"Dietetic Value of Vegetables and Fruits."
"How to Improve Home Conditions."
"Interior Decorations of the Home."—Illustrated.
"Things Worth While."
"Our Assets."
"Woman's Place in Primitive and Present-day Culture."

GUEST, MISS E. J., Belleville.—Miss Guest has had practical experience in a farm household and is a specialist and M.A. from Toronto University. Miss Guest is in charge of the English Department in the Belleville Collegiate Institute. Her activity in the Parkhill Institute did much to make towards success in that organization, and since going to Belleville her efforts have resulted in the formation of a Mothers' Club Women's Institute in that city. With a broad outlook and deep sympathy, coupled with her commonsense, practical methods, she can be depended upon to have something of special value for the Institute which she may visit.

Subjects:—

"The Mother: What She Owes to Herself, the Home and the Community."
"The Place of the Home in Canadian Life."
"Young Women and the Twentieth Century."
"Feeding School Children for Health and Brains."
"Squaring the Institute to the Needs of the Community."

HAMILTON, DR. L. S. M., 68 Macpherson Ave., Toronto.—Dr. Hamilton is a graduate of Toronto University and is secretary of the Canadian Purity Association. She is a speaker of experience aud presents her subjects in a bright, interesting and instructive manner.

Subjects:—

"The Health of Woman."
"A Child's Rights."
"A Girl's Possibilities."
"Eliminative Functions of the Body."
"Feeding Children."
"Teaching Life Truths."

HOBSON, MRS. EDITH, Mt. Elgin.—Mrs. Hobson is a graduate nurse of several years' experience and an ex-school teacher. She has rendered acceptable service in the local Institute work from time to time. Her subjects should prove of great interest and value in all localities.

Subjects:—

"The Rural Nurse and the School Nurse."
"Prevention of Colds."
"Typhoid."
"Baths."
"Worms."
"The Patient."

HOTSON, Miss A. M., Parkhill.—Eight years' experience in kindergarten work has impressed upon her the needs of children and the necessity for common-sense in supplying these needs in their life both at school and at home. Miss Hotson took her post-graduate work in Chicago, where she lived in Gertrude House, and had the opportunity of seeing the effect of residence life on girls and the value of the Home Makers' and Arts Courses for young women.

It was largely through Miss Hotson's influence that rooms have been provided for the use of the Women's Institute at Parkhill. A mothers' and babies' room has been provided, small tables, chairs and toys being furnished for the children. Miss Hotson will have many suggestions of value regarding programmes, evening lectures, co-operation of mothers and teachers, etc.

Subjects:—

"The School: Its Relation to the Community."
"Citizenship."
"The Education of Women."
"The Love of the Beautiful."
"Home Problems: Imagination, Discipline, Home Occupation for Children."
"The Family as a Shaping Influence."

HUNTER, MRS. W. J., Brampton.—Mrs. Hunter is one of our progressive Women's Institute members and has been of great assistance as a district officer in furthering the work in Peel County. She is mistress of a fine country home and has been active in local Institute work as well as assisting at some of our Annual Conventions and attending meetings in various sections of the Province.

Subjects:—

"The Making of Meat Pies."
"Systematic Housekeeping."
"The Benefits of Institute Work."
"Training Children in the Home."
"A Plea for the Boy."
"Don't Worry."
"Little Things that Make Home Happy—or Otherwise."

JOY, MRS. JEAN, 147 Balmoral Ave., Toronto.—Mrs. Joy was one of the first to take an active part in the introduction of Domestic Science in the schools of Ontario. Her varied experience as a teacher, practical housekeeper, and in institution life, has furnished her with a fund of valuable information for the home-maker. She has already had several years' experience in Women's Institute work.

Subjects:—

"Conservation of our Natural Resources."
"Woman's Work.
"Neglected Opportunities."
"Literature for Children."
"Teaching by Play.'

LETT, MRS. KENYON, Cobourg, Ont.—Mrs. Lett is a Domestic Science graduate with two years' experience in teaching at the Macdonald Institute. She speaks from experience on the feeding and care of infants.

Subjects:—

"Home Nursing and Emergencies."—Demonstrated.
"Wholesome and Entertaining Reading for the Family."
"Women's Influence in the Community."
"What Every Woman Should Know."
"Feeding and Care of Children."
"Feeding and Clothing School Children."

MACMURCHY, DR. HELEN, 133 Bloor St. E., Toronto.—Dr. MacMurchy's professional duties prevent her from devoting much time to Women's Institutes. However, the limited time which she gives is much appreciated by the Department and by the Institute members. Her addresses are pointed, full of enthusiasm, and always adapted to the needs of the locality visited.

Subjects:—

"Typhoid Fever."
"Accidents."
"Nerves."
"Tuberculosis."
"Infant Mortality."
"The Day's Work.

MCALPINE, DR. MARGARET, 619 Bathurst St., Toronto.—Dr. McAlpine is a practising physician of Toronto and has had the valued experience of lecturing before a great many organizations in that city. She has also had the advantage of a post-graduate course in medicine in Philadelphia. Many sections of the Province have profited by her addresses, and she is always a welcome delegate.

Subjects:—

"Mental Culture."
"The Romance of Medicine."
"How to be Well and Happy."
"Heredity."
"Perfect Womanhood."
"Work and Recreation."
"Emergency Treatment."
"Fresh Air and Tuberculosis."
"Home Hygiene."

MCMURCHIE, MISS H., Harriston.—Miss McMurchie is a Macdonald Institute graduate and has been taking a special course in Toronto University. She is always an acceptable delegate at Institute meetings.

Subjects:—

"How Food Helps to Maintain the Body."
"The Need of System in Housekeeping."
"How House Work May be Made Easier."
"Some Changes in Home Life."
"The New Outlook for Women."
"The Value of Pictures."—Illustrated.

MCTAVISH, MRS. D., Port Elgin.—We are fortunate in securing the services of Mrs. McTavish, who is so well and favorably known among the Institutes, to attend a few meetings this year. Her wide experience in Institute work, both as a local officer and a Departmental delegate, enables her to render valuable service to the Institute officers who are looking for suggestions as to how to make the work most successful.

Subjects:—

"Some Economies We Should Practise."
"Training Our Future Housekeepers."
"Means of Preserving Health."
"Home Economics."

McTURK, MRS. E. B., Lucan.—Mrs. McTurk has had special training as an optician and is well and favorably known as an enthusiastic, efficient worker in the local organizations. She attended a number of Institutes, where her services were much appreciated, a year ago. Her subjects speak for themselves.

Subjects:—

"The Care of the Eyesight."
"Mothers' Influence."
"To Our Girls."
"Home Care of Sick and Visiting Sick."
"Canning and Preserving."
"What That Other Institute is Doing."

MILLAR, MISS B., Box 91, Guelph.—Miss Millar's special training, wide experience, enthusiasm and tact stand her in good stead as an Institute worker. Through her experience in travelling dairy work in Nova Scotia and Institute work in New York State and Ontario, she has developed into one of our most pleasing and effective workers. Miss Millar is prepared to give the Institutes the benefit of her special training in home nursing and emergencies.

Subjects:—

"The Day's Work."
"Modern Methods in the Laundry."
"Some Essentials in Nursing."
"Milk and its Uses as Food."
"Dairy Sanitation."
"The Boarder Cow."
"Buttermaking and Other Dairy Problems."
"What Money Cannot Buy."
"You and I as Nation Builders."

MULDREW, MRS. JENNIE, Macdonald College, Ste. Anne de Bellevue, Que.—Mrs Muldrew has had experience in teaching in the various grades of the public schools and is also a Normal Graduate in Domestic Science at Macdonald Institute, Guelph. She is an experienced housekeeper and has for four years been house mother in Macdonald College, where she has oversight of the health and conduct of over 200 girls. Mrs. Muldrew is especially interested in child training and education.

Subjects:—

"Child Study: Cutting the Leading Strings."
"Home Nursing."—Demonstrated.
"House Planning and Furnishing."
"The Typhoid Fly, Commonly Called 'The House Fly.'"
"Education for Girls: Is our Present System Fair to Them?"
"Home Economics."

NORMAN, MRS. M. N., 616 Bloor St. W., Toronto.—Parenthood and racial ethics constitutes one of the most vital, fundamental and, strangely enough, one of the most neglected of all important themes. Mrs. Norman brings to its exposition practical views, clear enunciation, choice English with chaste diction of unusually happy style. Her personality as a speaker is particularly attractive. Her teaching appeals to the judgment as definite, convincing and final.

Subjects:—

Afternoon.

"What Does Motherhood Mean?"
"The Responsibility of Parents."

Evening.

"My Child's Future."
"How Shall We Develop Self-Reliance and Individuality in Our Children?"
"Mother, Teacher and Child."
"The Value of Good Cheer."
"Social Life in the Home."

PARSONS, MRS. HORACE W., "Stewartleigh," Forest.—Mrs. Parsons is Convener of the Press Committee of the National Council of Women, in which organizatlon she has taken an active interest for some years. Women's Institute work appealed to her and she has devoted much energy and thought in preparing addresses of vital interest to all women. Her wide experience in society work places her in a position to give valuable advice to the officers of the Institutes.

Subjects:—

Afternoon.

"A Practical Philosophy."
"Marriage."
"Canadian Laws Concerning Women and Children."
"The Education of the Girl."
"Literature in the Home."
"Banking Business for Women."

Evening.

"What the National Council of Women Stands For."
"The Old Homestead."
"Canadian Writers."
"Social Problems, and How to Meet Them."
"Citizenship and Patriotism."

POWELL, MISS M. V., Box 453, Whitby.—Miss Powell is a practical housekeeper, and has kept in close touch and sympathy with home life in the country. The logical, pleasing and forceful manner in which Miss Powell presents her very important addresses appeals very strongly to her audiences.

Subjects:—

"Character Building."
"Refinement in the Home."
"How We Can Help Our Girls, and How They Can Help Us."
"Canada Our Home."
"Value of Cheerfulness."
"Demonstrated Talk on Plain and Fancy Sewing."

REYNOLDS, MISS LULU, 754 Gerrard Street E., Toronto.—Miss Reynolds has had extended experience as Secretary of the East York Women's Institute. Institute officers will find her advice and suggestlons bearing upon Institute methods and work of special interest and value.

Subjects:—

"Household Management."
"Foods—Their Different Constituents." Illustrated by chart.
"Horticulture."
"Character Building."
"How to Make the Institute a Success."
"The Twentieth Century Woman's Accomplishments."

ROBSON, MISS ETHEL, Ilderton.—Miss Robson is a firm believer in advantages of country as compared to city life, especially when one takes an active interest in bee-keeping or some of the lighter branches of farming. Miss Robson has addressed public gatherings with great acceptance, and her services will certainly be much appreciated by the Institute members.

Subjects:—

"Bee-Keeping on the Farm."
"Economic Problems of the Country Girl."

ROSE, MISS LAURA, Guelph.—Miss Rose needs no introduction to the Women's Institutes of Ontario. Her ability as a public speaker and her wide knowledge of affairs place her in a position to render the best services to the Institutes. She has charge of the Home Dairy Department of the Agricultural College, and has instructed many farmers' sons and daughters in the art of buttermaking. Miss Rose has travelled from the Atlantic to the Pacific in connection with Institute and other instruction work along homemaking and dairy lines. Miss Rose's practical and carefully thought-out addresses, delivered in a pleasing and forceful manner, have placed her in the front rank of Institute workers. Her services have been sought by other Provinces and States. She has done Institute work in New York State, and has organized a number of societies in British Columbia. Miss Rose is well known as a writer of dairy topics and has recently published a book on "Farm Dairying."

Subjects:—

"The Dairy Cow."
"Difficult Churnings—Defects in Butter—Reasons and Remedies."
"Milk—Its Composition, Care and Use."—Illustrated.
"Ice Creams, Sherbets, Lactose; (Frozen Dishes)."—Demonstrated, if desired.
"Our Ways (Yours and Mine) of Doing Housework."
"The Influence of Environment."

SHAW, MRS. THOS., Hespeler.—Mrs. Shaw has been an enthusiastic worker in local Institutes as well as a representative of the Agricultural Department in this Province and Nebraska. Her practical experience and tact insure addresses of value and interest.

Subjects:—

"Beneficial Suggestions to Branch Institutes."
"Worry, Work, Waste."
"Some More Things Women Should Know."
"Listen, Learn and Love."
"What is Worth While."
"Some Advantages of a Country Home."

SMILLIE, MISS E. E., 1075 Dovercourt Road, Toronto.—Miss Smillie is a graduate nurse with considerable practical experience in her profession, and has also had the advantage of two seasons of Women's Institute work.

Subjects:—

"Emergency Treatment."
"Home Nursing."
"Personal Hygiene and Health in the Home."
"Disease Germs."
"Diet in Illness."
"Canadian Literature and Writers."

SMILLIE, DR. JENNIE, 1075 Dovercourt Road, Toronto.—Dr. Smillie is a graduate in medicine at the University of Toronto, 1909. She has also taken a post graduate course in Philadelphia. Her medical training, together with her experience of several years as a public school teacher in country places, fits her to render service which should be much prized by the Institutes.

Subjects:—

"Disease Germs."
"Prevention and Treatment of Tuberculosis."
"Hints for the Sick Room."
"Bandaging and Changing Bedclothing."—Demonstrated.
"Personal Hygiene and Health in the Home."
"Emergency Treatment."
"Infectious Diseases of Childhood."

WALSH, MISS R. A., Orono.—Miss Walsh has been an active worker in the local Institutes. She is a practical, experienced housekeeper, and will deal with the subjects announced from the standpoint of a practical woman.

Subjects:—

"The Girl Who Is Attractive—Her Influence in the Home."
"Hospitality—The Ideal Hostess and Guest."
"Table Setting and Serving."
"Helps for the Institute."
"Canadian Citizenship."

WATTS, MRS. F. W., Clinton.—Mrs. Watts has had marked success both as an Institute officer and lecturer. She is a forceful, pleasing speaker, whose addresses have been much appreciated. She is prepared not only to give addresses upon the subjects indicated, but also to assist the Institutes by rendering musical selections.

Subjects:—

Afternoon.

"Would You be Beautiful?"
"Home Nursing."—Demonstrated.
"What Mothers and Daughters Should Know and Remember."
"Women's Institute Helps."

Evening.

"Why Is It?"
"Happiness in the Home."

WOELARD, MRS. M. L., 671 Spadina Avenue, Toronto.—Mrs. Woelard is intensely interested in all matters which pertain to the home, and her addresses have been much appreciated. We can assure Institute officers and members that Mrs. Woelard will have messages of interest and benefit for her audiences.

Subjects:—

"Poultry Raising as a Business for Women."
"Plain Sewing and Art Needlework." Demonstrated.
"Canning and Preserving, Jelly Making, Marmalade and Pickles."
"Health Culture—Home Nursing." Demonstrated.
"The Home—Its Work and Influence."

GENTLEMEN SPEAKERS.

FARMER, G. H., Steelton.—Mr. Farmer has lived in Algoma for twenty-eight years, and for the past twenty years has been identified with nearly every progressive agricultural movement in his section, especially Institutes and Farmers' Clubs, pure seed, a better class of stock, and growing alfalfa. His experience and observations will be found of special value to the farmers who work under similar conditions, and especially to those who are beginners.

Subjects:—

Afternoon.
"Seed Selection."
"Growing Alfalfa in New Ontario."
"Selection of a Dairy Cow."
"Feeding Dairy Cattle."
Evening.
"Benefits of Institutes and Farmers' Clubs."
"Mistakes in Farming."

GROH, ANSON, Preston.—Mr. Groh is a practical farmer, with experience in clearing land and handling it to the best advantage while being placed in proper condition for the following of regular rotation of crops. He has been particularly successful in increasing the yield from the individual cows in his herd.

Subjects:—

Afternoon.
"Lucerne and Other Clovers."
"Seed Improvement."
"Corn and the Silo."
"Fertility of the Soil and Conservation of Moisture."
"Systematic Rotation of Farm Crops."
"Care and Management of Dairy Herd and Hogs."
Evening.
"The Stairway to Success."
"Three Generations in Waterloo County."

GROSE, HENRY, Lefroy.—Mr. Grose is the owner of a first-class farm in Simcoe County, and has been eminently successful in general farming. He has the happy faculty of presenting hard facts in a pleasing manner, and his address to boys on the farm is very instructive and uplifting. Mr. Grose has attended Institute meetings for several seasons with acceptance, and his services should be of special value in the northern sections.

Subjects:—

Afternoon.
"How to Increase and Maintain the Fertility of the Soil."
"Selection of Seed."
"Home Dairy Work."
"The Growing of Clover."
Evening.
"The Canadian Boy and Girl."
"Benefits of Institute Work."

JAMES, D., Thornhill.—Mr. James took possession of the farm on which he now resides some thirty-four years ago, and has succeeded in converting it from a bed of weeds and rubbish into a clean, systematic and well-equipped farm. He is a believer in general farming, as will be seen from his list of subjects. Some thirty years ago Mr. James and his neighbors formed an association and held weekly meetings throughout the winter. At that time he began a collection of a library, and to-day has one of the best-equipped agricultural libraries to be found among practical farmers.

Subjects:—

Afternoon.
"Destruction of Weeds."
"Home Dairying."
"Growing and Curing Alfalfa."
"Poultry on the Farm."
"The Feeding of Farm Animals."
"Seed Improvement."
Evening.
"Some Mistakes Made by Farmers."
"Boy Life and Bird Life as Viewed from the Farm."
"Dangers to Health in our Rural Homes, and Some of the Remedies."

BINDING SECT. AUG 24 1967